



China Resources Cement  
Holdings Limited

**Social Responsibility  
Report 2019**



# Foreword

## Reporting Frequency

This report is published on an annual basis and is the seventh Social Responsibility Report which China Resources Cement Holdings Limited published to the public.

## Reporting Period

Unless otherwise specified, this report covers the period from 1 January 2019 to 31 December 2019, with some content extended to 30 April 2020.

## Description of References

For ease of reference, "CR Cement", "the Company" or "we" mentioned in this report all stand for "China Resources Cement Holdings Limited and its subsidiaries".

## Basis of Reference

- "GRI Sustainability Reporting Standards" of Global Reporting Initiative
- "The Guide for Business Action on the United Nations Sustainable Development Goals (SDGs)"
- "Guidance on Social Responsibility Reporting" of GB/T36001-2015
- "Environmental, Social and Governance Reporting Guide" of The Stock Exchange of Hong Kong Limited
- "Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR4.0)" of Chinese Academy of Social Sciences
- "Guidance on Social Responsibility of Cement Enterprise", "Guidance on Social Responsibility Reporting of Cement Enterprise" and "Social Responsibility Evaluation Index System of Cement Enterprise" of China Cement Association
- "China Resources Group Management Measures for Social Responsibility"

## Data Description

The data in this report is sourced from the official documents and statistical reports of CR Cement, with the consolidated financial statements audited by Ernst & Young. The Company undertakes that there are no misrepresentations, misleading statements or material omissions in the contents of this report.

## Preparation Procedures

To ensure completeness, authenticity and balance of contents, this report was prepared with reference to the abovementioned standards by taking such steps as industry benchmarking, questionnaire surveys, information gathering, review on the information gathered, report drafting, and final review by the management.

## Access to this Report

The electronic versions in Chinese and English are available on the website of the Company.

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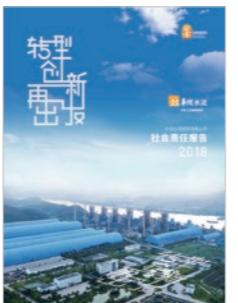
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## List of Previous Reports



▲ 2018 Social  
Responsibility Report



▲ 2017 Social  
Responsibility Report



▲ 2016 Environmental,  
Social and Governance  
Report



▲ 2015 Social  
Responsibility Report



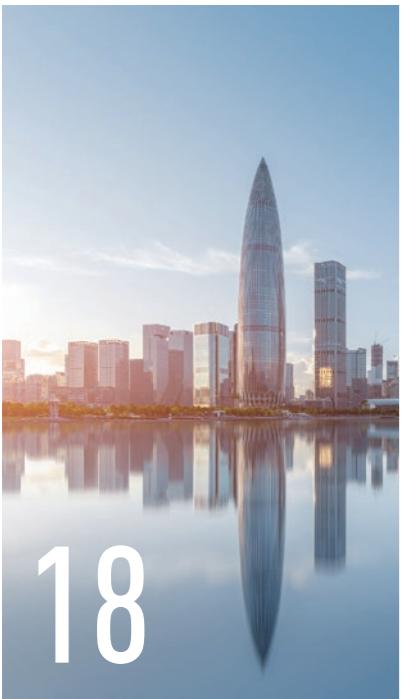
▲ 2014 Social  
Responsibility Report



▲ 2013 Social  
Responsibility Report

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# A Letter to Stakeholders

## Dear Stakeholders,

On hot summer days which might melt stonework and gold, the "China Resources Cement 2019 Social Responsibility Report" was completed on schedule. We are very glad to share with you our contributions, rewards and insights in the field of social responsibility in the past year.

2019 is the 70<sup>th</sup> anniversary of the establishment of the People's Republic of China, and is the crucial year for achieving the first Centennial Goal for the completion of building a moderately prosperous society in all respects. This year, around the management theme of "transformation, quality improvement, stability, innovation", CR Cement continued to develop the three core strengths of the "lowest total costs, leading market position in the region, innovation-driven development". We adhered to the ideology of "high aspirations, high standards" and implemented the requirements of "no production when unsafe". Operational excellence had been deepened to promote transformation and innovation, and achieve new highs in results performance.

This year, we entered into a strategic cooperation agreement with Yunnan Construction and Investment Holding Group Co., Ltd., to launch comprehensive cooperation in terms of cement, concrete and aggregate businesses and enhance market competitiveness. We are actively exploring development opportunities for aggregates business in the regions where we have business operation, and successfully acquired the mining rights of a granite quarry for construction (used for manufactured sand) in Wenxi mining concession, Wuping County, Longyan City, Fujian. Through Runfeng New Materials, we acquired 40% equity interests of Universal Marble, which further promotes strategic transformation, creates business synergy value and achieves extension and development of industry chain. Given the opportunities from the vigorous development on the prefabricated construction industry in China, through

our positioning in Southern China, we actively develop the prefabricated construction business. In addition to Donguan RunYang and Nanning Hongji in operation, the prefabricated construction projects of Zhanjiang RunYang, Nanning Wuhe and Guigang Runhe have all started construction.

This year, we actively responded to the national policies of energy saving and emission reduction, promoted the co-processing of municipal solid waste, urban sludge and hazardous industrial waste by use of cement kilns, actively involved in the treatment and management of social solid waste, atmospheric and water pollution, and achieved the transformation to an environmentally friendly enterprise. In 2019, the Company's emission concentrations of nitrogen oxides, sulphur dioxide and particulate matters were better than national standard limits of pollutant emissions. In addition, we also promote the construction of green mines and green factories with "ecology, environmental protection, safety and collective use of resources" as our main task. As of the end of 2019, 16 mines have been included in the registers of provincial-level or autonomous regional-level green mines, and 8 mines have passed the selection of national-level green mines. Tianyang Cement, Nanning Cement, Pingnan Cement, Wuxuan Cement and Heqing Cement have been included in the national-level Green Manufacturing register as "Green Factories".

This year, by integrating the needs of corporate development with the employees' individual needs of development, we continued to promote online and offline learning, enriched staff training formats and improved the convenience of participation in training. Relying on the platform of CR Cement College and based on the Company's strategic development, management requirements and employee growth, we reinvented the talent cultivation system founded on projects, courses and lecturers

as pillars, and secured support on system. CR Cement College had promoted further specification of functions and positioning and further consolidation of fundamental management through team planning pilot project, encouraging basic-level employees to get the basic knowledge standard certification, continued optimization of leadership and new employee training programmes, construction of fully autonomous courses and internal trainers' resources pool, and improvement of the training system. In 2019, the total duration of online and offline training relating to staff development was approximately 254,900 hours and the average training duration per employee was approximately 13 hours.

This year, we wholeheartedly provided products and services of excellent quality to our customers based on the customer-oriented principle, whilst upholding the core values of honesty and trustworthiness and strictly abiding by business ethics. Driven by customers' demands, we persistently enhance the management level of quality and process, and conduct 24-hour monitor, checks and tests on the process of product production to implement practical and fine work on quality improvement. We also did in-depth exploration of informationization construction and digitalization transformation of the cement industry, deepened development of intelligent manufacturing, smart inventory, smart marketing and smart logistics to promote continuous improvement and optimization of production and operation whilst improving efficiency. By strengthening communications with customers, carefully safeguarding the rights and interests of customers and consumers, meeting and exceeding customers' expectations, we optimize the customer experience and improve customer satisfaction.

This year, we continued to optimize supplier management, improve the supplier management system and independently developed supplier relationship management system, manage and provide consultation on admission, cooperation, evaluation and exit of suppliers to establish a transparent, traceable, long-term stable and sustainable supply chain. Based on the Company's strategy and characteristics of materials procurement, we formulated the criteria for development and selection of suppliers, and introduced high-quality suppliers through multiple channels. In 2019, we achieved full-lifecycle management of 9,074 suppliers and further optimized the supplier structure.

This year, we proactively participated in community charitable service activities. Through donations of cement products, we help neighbouring towns and villages in the construction of roads, repairs of bridges and improvement of community infrastructure through renovation and upgrade of old houses and launch of hygiene remediation activities. We also make donations in cash and in kind to underprivileged regions and underprivileged families to solve their practical difficulties. We pay keen attention to caring for special groups and organize each unit to proactively visit elderly care institutions and rehabilitation centres in the neighbouring villages, and express solicitude to the elderly without family, the general public in need, people with serious intellectual disabilities and the disabled. We are continuously concerned regarding education and development for children in the underprivileged mountainous regions. We help to create a better learning environment and ambience and help more children to receive excellent education resources through donations of teaching materials, set-up of scholarships and study grants, and rolling out charitable subsidized schooling.

Looking ahead, we will have important responsibilities. 2020 is the crucial year in the process of the great rejuvenation of the Chinese nation, a decisive period for achieving the completion of building a moderately prosperous society in all respects, and an important historical confluence period for achieving the "Two Centennial Goals", closing the "Thirteenth Five-Year Plan" and beginning the "Fourteenth Five-Year Plan". The tolling of a large bell is definitely sonorous, and those with lofty aspirations are definitely of great interest and charm. In the new year, all the staff of CR Cement will strive to be at the forefront of the times, keep the responsibility taken in mind, do the right thing and work hard in a more confident and proactive attitude and brimming with passion. We will stride forward to continuously advance high-quality development, promote industry innovation, lead green development and build an everlasting business!



# About CR Cement

▲ Factory area of China Resources Cement (Anshun) Limited



## China Resources Cement Holdings Limited

Incorporated in 2003

Stock Code at The Stock Exchange of Hong Kong  
Limited: 1313.HK

A company listed in Hong Kong under the state-owned  
enterprise China Resources Holdings

A large-scale and competitive cement, clinker and  
concrete producer in Southern China

Ranked third in terms of comprehensive strength of  
Chinese listed cement companies in 2019 (published by  
the China Cement Association)

## Corporate Profile

## National Unified Brand

**Operating Regions** Guangdong, Guangxi, Fujian,  
Hainan, Yunnan, Guizhou, Shanxi,  
Inner Mongolia and Hong Kong

**Annual Production Capacity** Cement 104.5 million tons, Clinker  
72.9 million tons, Concrete 41.3  
million m<sup>3</sup> (including the Company's  
subsidiaries, associates and joint  
ventures as at the end of 2019)



**Vision:** To become a respectable world-class cement enterprise

**Mission:** To provide customers with quality products and services, promote innovation  
and lead green development in the industry, thereby building an everlasting business

**Values:** Honesty and trustworthiness, performance-oriented, people-oriented,  
innovation-driven development

**Corporate Spirit:** Pragmatic, professional, collaborative, dedicated

**Development Concepts:** Be practical, be strong, be large, be excellent, be enduring

## Cultural Ideals

## Examples of Construction Projects



**Hong Kong** Hong Kong International Airport, Hong Kong International Finance Center, Hong  
Kong Tsing Ma Bridge, Ting Kau Bridge, Shek Kwu Chau Incinerator

**Guangdong** Hong Kong-Zhuhai-Macao Bridge, Shenzhen Airport, Shenzhen Yantian Port,  
Shenzhen Mixc, China Resources Tower, Guangzhou-Shenzhen Expressway,  
Guangshen-Yanjiang Expressway, Canton Tower, Guangzhou Metro, Foshan Metro

**Guangxi** Nanning Mixc, Guangxi Xijiang Shipping Hub, Nanning Airport, Qinbei  
Expressway, Bailongtan Hydropower Station, Nanguang High-Speed Railway,  
Guinan High-Speed Railway, Nanchong Railway

**Fujian** Xiamen Cross-Strait Financial Center, Zhangyong Expressway, Xiamen Luzhou  
University City, Xingquan Railway

**Hainan** China Wenchang Spacecraft Launch Site, Hainan Island Ring Expressway,  
Changjiang Nuclear Power Plant

**Shanxi** Taijiao Railway

**Yunnan** Xiangli Railway, Guangda Railway, Linyi Airport, Xiangli Expressway

**Guizhou** Jiayan Dam, Zunyi Maotai Airport, Xigu Expressway, Renzun Expressway

## CR Cement in 2019



## Organizational Structure

CR Cement utilizes the three-tier management structure of "Headquarters-Regions-Production Plants" with 17 functional departments at the headquarters. According to the business distribution, 7 regions had been established in total, involving in businesses of cement, concrete, aggregates, new materials, prefabricated construction and co-processing. As of the end of 2019, the Company had a total of 19,816 employees.

## Business Distribution

Products of CR Cement are mainly sold in Guangdong, Guangxi, Fujian, Hainan, Yunnan, Guizhou and Shanxi in reliance on our well-established waterway, railway and road logistics networks. As of the end of 2019, the Company had 96 cement grinding lines, 45 clinker production lines and 61 concrete batching plants with annual production capacities of 84.3 million tons of cement, 61.3 million tons of clinker and 36.9 million m<sup>3</sup> of concrete respectively.

In addition, through equity interests of certain associates and joint ventures, CR Cement owned a total of 74 cement grinding lines, 28 clinker production lines and 20 concrete batching plants which are mainly located in Guangdong, Hong Kong, Fujian, Yunnan and Inner Mongolia. The respective annual production capacities attributable from equity interests of these associates and joint ventures were 20.2 million tons of cement, 11.6 million tons of clinker and 4.4 million m<sup>3</sup> of concrete.



# Compact responsibilities, implement precise policies, resumption of operation and production with the "two corrects"—we are together to fight the epidemic

In 2020, upon the attack of novel coronavirus pneumonia, CR Cement actively responded to the national work deployment of epidemic prevention and control. A leading group on epidemic prevention and control was established immediately to compact responsibilities and implement precise policies. On the basis of normalizing epidemic prevention and control, we promoted the resumption of operation and production in an orderly manner, so that epidemic prevention and control as well as resumption of operation and production had been "resolutely grasped with both hands, with the two corrects".



▲ Dongguan Cement conducted body temperature checks and registration of all visitors

## Timetable for fighting the epidemic

### January

23 Published "Notice on Strengthening Joint Prevention and Joint Control of Pneumonia Infected by Novel Coronavirus".

26 Established a leading group on epidemic prevention and control, to organize and coordinate the overall work on epidemic prevention and control, and urge operating regions and production plants to implement prevention and control measures.

28 Organized a special video conference for the work on epidemic prevention and control and resumption of operation and production, to discuss the pre-judgment and tackling measures for resumption of operation and production and to conduct a comprehensive deployment of epidemic prevention and control and orderly implementation of resumption of operation and production.

### February

3 Convened a video conference to report and discuss the situation of epidemic prevention and control, production and operation.

10 • Issued "A Letter to People of CR Cement" to encourage employees to actively participate in epidemic prevention and control and resumption of operation and production.  
• Hong Kong headquarters officially resumed operation and adopted a shift work system.  
• Shenzhen headquarters began to implement remote office work.

17 Shenzhen headquarters officially resumed operation, adopting measures such as off-peak shifts and an 8-hour flexible working system.

19 Published "Notice on Inclusion of Novel Coronavirus Pneumonia in Subsidization from the Gratitude Fund". Employees and their parents, spouses and children who are unfortunately infected or suspected of being infected with novel coronavirus pneumonia might apply for subsidies of relevant treatment costs from the "China Resources Cement Gratitude Fund".

### March

13 Convened a special video conference for safety management work on resumption of operation and production.

31 General Manager of China Resources Holdings Wang Xiangming, Director Pan Fu and Deputy General Manager Wang Chuandong visited Shenzhen Headquarters of CR Cement to investigate and research on epidemic prevention and control as well as resumption of operation and production.

### March to April

CEO Ji Youhong visited places like Yangjiang Concrete, Yangjiang Cement Port project and Gaoyao Concrete to inspect the work of epidemic prevention and control and resumption of operation and production.





▲ Hongshuihe Cement employees disinfected the factory area



▲ Special video conference for safety management work on resumption of operation and production



▲ Fuchuan Cement donated materials to Baisha Town People's Government



▲ Fulong Cement maintained safe social distancing during morning meeting

## Table of Anti-Epidemic Data

463

Established dynamic information ledger of 463 employees of key focus (including 156 employees who returned to Hubei during the Chinese New Year, 76 employees who returned home through Hubei and 231 employees who were in contact with epidemic areas or related to epidemic), which reported and compiled itineraries, situations of quarantine and return to work on a daily basis.

4,215

During the Chinese New Year, an average of 4,215 employees persevered in their job duties each day, representing approximately 32% of the Company's production staff.

1.0336

As of early April 2020, employees of the Company had donated a total of RMB1.0336 million to "China Resources Cement Gratitude Fund" to combat the epidemic; capital of RMB0.65 million for epidemic prevention and control and epidemic prevention supplies of a total value of RMB0.1927 million were donated to relevant units in the regions where our businesses were located.

In early April 2020, overall attendance rate reached 100% and sales levels of subsidiaries reached approximately 90%.

100%



▲ Wuxuan Cement put up bulletin board for promoting prevention and protection of novel coronavirus

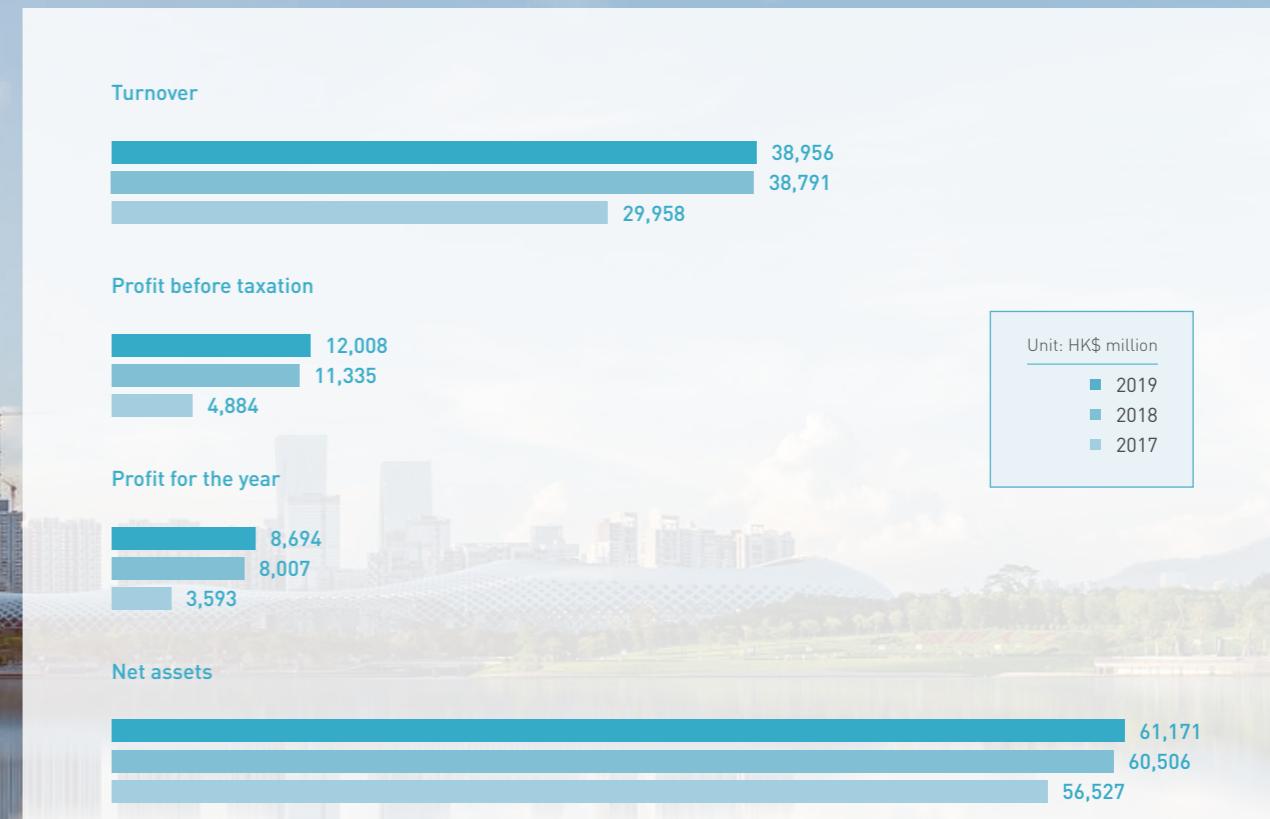
In mid-April 2020, normal sales levels were basically recovered, and equilibrium between production and sales was reached.

As of the end of April 2020, there was 1 employee confirmed case of infection (cured).

CR Cement firmly seizes the development opportunities of the times, accurately grasps the internal logic of reform and development, continuously improves the internal governance structure of the Company, strengthens the construction of internal systems, improves the standard of corporate governance and promotes the stable progression and everlasting future of the Company with more efficient organizational control and development of higher quality. The Company will be built as a management intensive, quality and efficiency focused modern enterprise to achieve stable and sustainable development.

# Steady Operation

## Build a Solid Foundation for Development



## Create six-star model factories

### Promote operational excellence

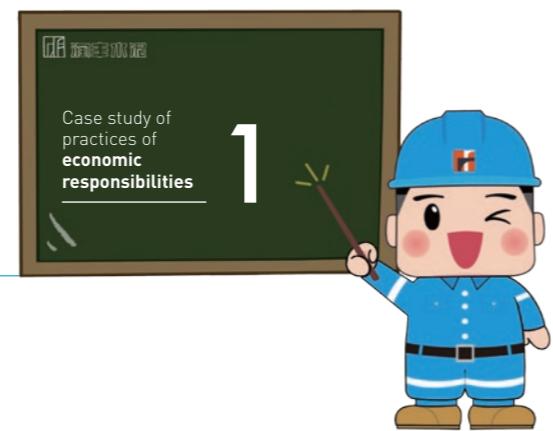


▲ China Resources Concrete (Guangxi) Limited

China Resources Group's six-star model factory is a role model within CR Group in the six aspects of complete system, effective indicators, industry leader, excellent performance, lean improvement, talent cultivation and cultural construction, giving full play to the multiple functions of "sources of innovation, training plant, display window".

China Resources Concrete (Guangxi) Limited, which completed construction and commenced production in August 2006, is located in Jiangnan District of Nanning City, hence also named as "Jiangnan Station". It is the third concrete batching plant invested by CR Cement in Guangxi.

Since 2015, Jiangnan Station had launched the pilot work for model factory construction, introduced lean management ideas and methods, and formulated construction plan of model factory. They organized system indicators and built the company's framework for operational excellence system. They focused on business management and functional management and control, continuously optimized the excellent operational system, enhanced operational efficiency and enhanced market competitiveness through closed loop management of goal setting, performance monitoring and feedback optimization. In 2017-2019, Jiangnan Station was rated as "China Resources Cement Five-Star Plant" for three consecutive



years. In 2019, it was awarded the title of "China Resources Group Six-Star Model Factory".

In the recent five years of creating model factory, Jiangnan Station has made useful practices in many aspects, among which, there is no lack of achievements and highlights.

**Vigorously promote lean operation.** By formulating and implementing management measures and technical measures, Jiangnan Station secured supply of raw materials and the quality of products leaving the factory and reduced production costs. In 2018, the capacity utilization rate increased by 5% as compared with 2017 and the sales volume increased by 9%. At the same time, through the combination of trial prescription and production practice, the mix ratio was continuously optimized to effectively improve the working performance of concrete.

**Strengthen EHS management.** Jiangnan Station adheres to the principle of "high aspirations and high standards" and the policy of "safety first, with a focus on prevention and comprehensive treatment" to achieve a full coverage of the list of EHS responsibilities. In 2017, it was awarded the certification of "First Level 2 Safety Standard Enterprise of Concrete Industry in Nanning City". It passed the "Nanning High Performance Concrete Production Enterprise" certification for three consecutive years from 2017 to 2019. In both 2018 and 2019, it had no safety accidents with minor injuries or above, and the recycling rate of production wastewater reached 100%. In 2019, the title of "Nanning City Model Enterprise for Creating Dual Prevention Mechanism" was awarded.

**Promote R&D and innovation.** Jiangnan Station is actively involved in the research and development of new products and technologies. The sales of permeable concrete jointly developed with China Resources Cement Technology Research and Development Centre



▲ Workspace of China Resources Concrete (Guangxi) Limited



▲ Batching plant of China Resources Concrete (Guangxi) Limited

has increased exponentially, making important contributions to the construction of a sponge city in Nanning City. In addition, by optimizing the mix ratio of the high-level pumping system, they supplied concrete to Guangxi Jiuzhou International Building (the third tallest building in Nanning with 6 floors underground, 72 floors above ground and a total building height of 318 metres) to solve the performance difficulty of concrete pumped for vertical heights of over 300 metres and to ensure that concrete workability met the technical requirements of pumping and construction. The company also has mature technology in ultra-long-distance pumping projects. It supplied Luowen Bridge in Nanning City and the central pier reached a pumping distance of 300 metres.

Not only at Jiangnan Station, CR Cement continued to carry out diagnosis on the quality of technique process and improvement projects to help production plants improve operational indicators through construction of model factories, corporate-specific policies, precise support and strengthening benchmarking. Various production plants had substantially reduced consumption indicators such as coal consumption, electricity consumption, residual heat power generation and ammonia water usage. They have further strengthened lean management, effectively reduced operating costs and improved operational indicators, which has effectively enhanced the quality and efficiency of the corporates' operations.

In 2019, CR Cement further optimized and perfected the operational excellence system structure, aimed at the advanced indicators of internal and external model enterprises and focused on highlighting key indicators in the fields of EHS, financial performance, production and operational management, in order to guide and promote production plants to roll out benchmarking work. The construction of star grade production plants was promoted through development and propagation of courses, on-site counselling and targeted paired support for production plants with lower star-grades. In that year, total number of units of CR Cement which participated in star-grading appraisal reached 84, and 39 units improved their star-grades. Among which, Nanning Cement and Jiangnan Station were commended the title of "China Resources Group Six-Star Model Factory". As of the end of 2019, CR Cement had a total of 7 China Resources Group "six-star" production plants.

## Standardize Corporate Governance

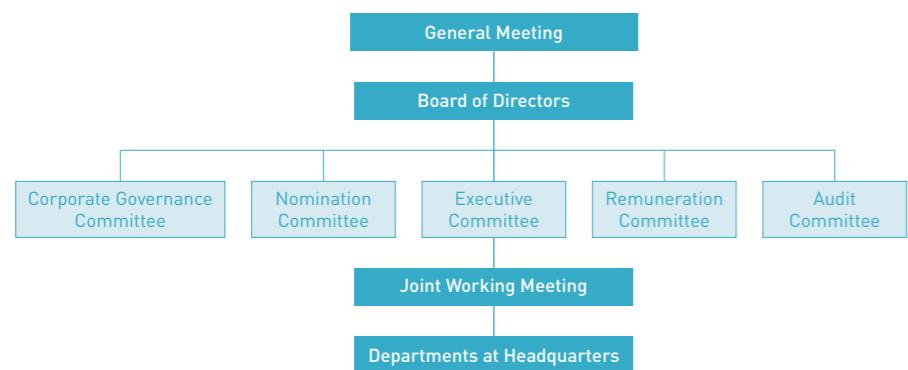
### System Construction

In order to improve the corporate governance system and enhance modernized governance capabilities, CR Cement formulated, issued and implemented the "Manual for Operations of Rights and Responsibilities". In May 2019, the terms of reference of the Executive Committee of CR Cement was amended. In July 2019, CR Cement's "Three Important and One Large" Decision-Making System (including the "Manual for Operations of Rights and Responsibilities"), Rules of Procedures of Board of Directors' Meetings, and Rules of Procedures of Working Meetings were issued and implemented. In October and December 2019, "Three Important and One Large" Decision-Making System (including the "Manual for Operations of Rights and Responsibilities") and Rules of Procedures of Working Meetings were issued and implemented at the levels of operating regions/production plants respectively.

### Structure of Board of Directors

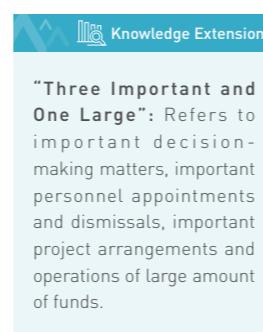
CR Cement established the Board of Directors strictly in accordance with the Company's articles of association and the "Corporate Governance Code" set out in the Listing Rules. The Board is responsible for the important decision-making matters such as the Company's strategic goals and supervision of business management. The Board has set up Corporate Governance Committee, Nomination Committee, Executive Committee, Remuneration Committee and Audit Committee. Each special committee performs its duties in accordance with the scope of authorization, promptly reports to the Board on the exercise and execution of these authorized matters, and submits professional advice on important decision-making matters to the Board.

Organizational Structure Chart of Board of Directors



### Compliance Management

CR Cement attaches great importance to corporate management according to law, comprehensively sorts out the construction of "rule of law" culture, continuously improves the legal compliance systems and solidly promotes corporate compliance management. In 2019, the Company introduced the two systems of "Interim Measures on the Management of Related Party Transactions of Managers of China Resources Cement Holdings Limited" and "Rules of Procedure of Meetings of the Compliance Committee of China Resources Cement Holdings Limited on the Management of Related Party Transactions of Managers", and issued the "Notice to Managers Regarding Declaration of Related Party Transaction Information" to conduct special investigations on issues such as incompliant holding of shares and related party transactions. We cooperated with CR Group's antitrust compliance guidelines and case study database project to carry out research on antitrust compliance. We conducted multiple in-depth legal and compliance training on labour law and antitrust law to further enhance the legal and compliance awareness and management standard of employees at all levels and to avoid the occurrence of relevant violations during corporate operation to the fullest extent.



**"Three Important and One Large":** Refers to important decision-making matters, important personnel appointments and dismissals, important project arrangements and operations of large amount of funds.

### Risk Prevention

CR Cement puts the prevention and resolution of major risks in a prominent position. Every year, the Company conducts overall risk assessment and specifies management and control measures. Every quarter, we continuously monitor and control major risks, and optimize management and control measures. In 2019, the Company launched special treatment and management on major risks (safety management risks, information security risks) and no major risk events occurred throughout the year. The Company formulated and amended 43 management systems to further improve the construction of internal control systems. To strengthen systematic rectification, we organized and launched training on audit and risk case studies with a total of more than 800 participants to promote the continuous enhancement of compliance awareness and business risk prevention capabilities of all employees.



▲ Formulated and amended 43 management systems of the Company in 2019

### Protect the Rights and Interests of Shareholders

As the core principles of corporate governance, CR Cement gives high priority to maintaining effective, transparent and constructive communications with shareholders and other investors. The Company believes that its relationship with shareholders is critical to its future success and shareholders' value can be enhanced through clear communications.



▲ In 2019, the Company held 1 Annual General Meeting, 7 Board meetings, 3 Corporate Governance Committee meetings, 1 Nomination Committee meeting, 30 Executive Committee meetings, 1 Remuneration Committee meeting, and 4 Audit Committee meetings.



▲ Conducted a total of approximately 190 investor conference calls, face-to-face meetings and roadshow meetings in 2019

In order to ensure shareholders' exercise of their rights in an informed manner, CR Cement has established a shareholders' communication policy and dedicated an investor relations team as the primary contact of the Company with shareholders, investors and analysts. The Company welcomes views and inputs from shareholders and investors by ways of mail, telephone, fax or email. The Company actively responds to daily inquiries from shareholders and investors, and publishes important information of the Company on the Company's website and its official website for corporate communications. The Company also holds results presentation meetings for investors after the release of annual results and interim results. The presentations are broadcasted on the internet to ensure that domestic and overseas shareholders and investors understand the Company's business operations and future development strategies from the online videos as well as to understand the Company's performance, strategies, prospects and the operating environment of the markets in an equal and timely manner.

The Company keeps close contact with the investment community and regularly participates in different activities including investor meetings, roadshows and investor conferences held by various investment banks in order to increase interactions with shareholders and investors. In 2019, the Company participated in a total of approximately 190 investor conference calls, face-to-face meetings and roadshow meetings which enabled direct communications with fund managers and analysts worldwide.



▲ In November 2019, CR Cement organized a three-day reverse roadshow in Nanning City and Baise City, Guangxi, with a total of 30 analysts and representatives from banks in participation. During the activity, investors and the Company's management were engaged in extensive discussions. The visits to Tianyang Cement and Baise Concrete batching plant have deepened the understanding on the trends of the cement industry, CR Cement's co-processing projects and CR Cement's business model for "integrative development of cement, concrete and aggregates".

## Uphold the Integrity Red Line

### Build a Firm “Firewall” against Integrity Risk

CR Cement comprehensively reviews integrity risks of senior and middle-level managerial staff and formulates summary report on integrity risks of senior management and key roles. We launched the identification, treatment and management of risks in the fields of investment, mergers and acquisitions, and completed the “Research Report of China Resources Cement Holdings Limited on the Key Steps, Risk Identification and Remediation Ideas regarding the Benefits Transmission of Investment and M&A”. We promulgated the “Measures for Replying to the Integrity Opinions of Senior Management of China Resources Cement Holdings Limited” to further regulate the procedures for pre-appointment review and integrity opinion consultation of senior and middle-level managerial staff. We integrated discipline supervision into the annual star-grading management appraisal of production plants to achieve multi-dimensional supervision on production plants by functional departments. We also maintain smooth whistle blowing channels for reporting and accepting complaints, and resolutely investigate and resolve corruption issues behind various risks. In 2019, the Company and its employees were not involved in any corruption litigation cases.

## Probity Education

CR Cement places strong emphasis on and continuously strengthens the work for integrity cultivation and probity education. On one hand, positive reminders and negative warnings are used collaboratively. Discipline inspection institutions at all levels issued integrity reminders on major festive holidays. We widely launched “integrity education delivered to the door”. In 2019, over 300 sessions were conducted, reaching 15,742 participants in total. Daily confiding conversations were initiated with 1,044 staff. 387 senior and middle-level managerial staff were organized to sign the “Commitment Letter on Integrity and Self-Discipline”. 1,755 staff involved in sensitive roles such as procurement and sales signed the Sunshine Declaration. On the other hand, alert education meetings were launched with typical case studies as clear illustrations of disciplinary rules and learning lessons. CR Cement held an alert education meeting in 2019, with 895 senior and middle-level managerial staff and staff involved in sensitive roles in participation. 2,058 leading managers were organized successively to thoroughly learn the spirits of the alert education meeting.



▲ CR Cement's senior management on discipline inspection offered probity education propagation to “Runfeng Blue” qualified middle management at China Resources Cement College

## Support Lean Operations

CR Cement continuously optimizes its operational management system, continuously promotes management reform, performance reform and motivation reform, integrates lean management concepts into the whole process of corporate operation, practically increases operational management standard and effectively enhances the Company's comprehensive competitiveness while saving operating costs. In 2019, the Company launched a total of 17 lean operation projects and 15 projects for application of innovation achievements.



### Indicator enhancement plan

Based on the completion situation of indicators of coal consumption and electricity consumption in 2018, we organized production plants to benchmark with the Company's advanced standards, formulated annual enhancement plans and implementation measures, check and track the completion situation of the enhancement plans during annual appraisal to promote the gradual enhancement of management standard of production plants.



### Belt rated personnel assessment

We continuously carry out the training and assessment of lean belt rated personnel. 31 new Green Belt personnel and 31 Yellow Belt personnel were promoted during the year. At the same time, personnel accredited with belt ratings were organized to take the lead in promoting lean management. For the existing outstanding problems in production plants, improvement subjects were set up and improvement subject groups were established to promote the improvement work in an orderly manner. Good results had been achieved in reducing production costs and improving operating indicators.



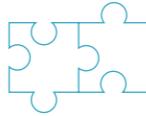
### Star-rating improvement of production plants

Through multiple measures such as the development of management personnel empowerment training courseware, on-site counselling, pairing assistance and closed-loop appraisal management, production plants have been motivated to participate in star-rating improvement. In 2019, the Company newly added 2 “Six Star” production plants of CR Group including Nanning Cement and Jiangnan Station of Nanning Concrete, to a total of 7.



### Technological support work

Throughout the year, we solved 74 major common technical problems of production plants such as production project management, technical indicators and equipment management, and found countermeasures through benchmarking to achieve continuous improvement in operational indicators.



### Promote technological progress

We completed the pilot application of new technologies and new equipment for energy saving such as highly effective centrifugal fans, roller press studs and two-stage air compressors, which had effectively reduced electricity consumption and maintenance costs and promoted technological progress. Meanwhile, technological diagnosis on the quality of technical process was organized to effectively reduce coal consumption, electricity consumption and ammonia water usage. Through the application of low-grade limestone, the difficulty of deeply-compressed ore had been solved, which saves disposal costs of waste stone, expands the area of mineable mines and extends the service lifespan of mines.

### Knowledge Extension

**Belt rating:** According to the “CR Cement Lean Talent Certification Scheme”, lean talents are divided into five levels in descending order: Lean Leader, Lean Black Belt Master, Lean Black Belt, Lean Green Belt and Lean Yellow Belt.

### Knowledge Extension

**Star-rating management appraisal:** By formulating a series of appraisal standards, all production plants in operation (clinker, grinding station, concrete) are assessed. The star-rating of production plants is divided into 6 levels from 1-star level to 6-star level, among which, 6-star level is the highest level.

### Knowledge Extension

**Deeply-compressed ore:** Refers to the situation where waste stone that is pending disposal and cannot be used for production is compressed in mineable quarry area.

## Extension of Industry Chain

### Aggregates

CR Cement is actively exploring opportunities for the development of aggregates business in the regions where we have business operation. We will fully leverage on the synergistic advantages of cement, concrete, aggregates and prefabricated construction businesses, promote integrative industrial development and further consolidate the Company's core competitive advantages. In November 2019, the Company successfully acquired the mining rights of a granite quarry for construction (used for manufactured sand) in Wenxi mining concession, Wuping County, Longyan City, Fujian, with resource reserve of approximately 56.0 million tons and planned annual production capacity of approximately 2.0 million tons, which is expected to commence operation in 2021.

### New Materials

In order to accelerate the pace of transformation and development and quickly cultivate new drivers for profit growth, through Runfeng New Materials, CR Cement invested in Universal Marble with a total of 40% equity interests and delegated all the staff of Runfeng New Materials to participate in the operation and management of Universal Marble. The principal businesses of Universal Marble are processing of natural stone, and manufacture and sale of engineered stone. Its products are mainly applied in the renovation and decoration of municipal buildings, residences, shopping malls, hotels and office buildings. As of the end of 2019, Universal Marble's financial indicators were steadily improving, attributable to the execution of agreements and implementation of multiple demonstration projects through Runfeng New Materials.

 Stone materials were supplied to the projects for Xi'an three centers

The Xi'an three centers refer to the three major projects of Xi'an Olympics Sports Center, Xi'an Silk Road International Conference Center, Xi'an Silk Road International Exhibition Center. These are representative projects of Universal Marble attributable to the execution of agreements and implementation of multiple demonstration projects through Runfeng New Materials. China Resources Land Limited is a contractor responsible for construction and operation while Runfeng New Materials is responsible for the supply of stone materials. The supply of stone materials from Runfeng New Materials enabled the project to meet the scheduled deadlines of the construction and quality targets, which was unanimously praised by all parties involved in the projects and laid a good foundation for subsequent collaborative cooperation in new scopes between CR Cement and China Resources Land.



 Xi'an Silk Road International Conference Center



 Factory area of China Resources Cement (Anshun) Limited

### Prefabricated Construction

Given the opportunities for the vigorous national development on prefabricated construction, CR Cement had further optimized resources distribution to actively develop its prefabricated construction business through its positioning in Southern China and in combination with the development strategy for extension of industry chain. As of the end of December 2019, the Company had 2 prefabricated construction projects in operation and 3 prefabricated construction projects under construction.

**Table of prefabricated construction projects**

Project name	Area of land acquired (m <sup>2</sup> )	Design annual production capacity (m <sup>3</sup> )	Status	Particulars
Guangdong				
Dongguan Runyang (note 1)	-	40,000	In operation	Currently, products are mainly supplied to public housing and commodity housing projects in Shenzhen Municipality and Zhuhai City.
Zhanjiang Runyang	210,000	400,000	Under construction	Phase 1 production line of precast concrete components (design annual capacity of 200,000 m <sup>3</sup> ) is expected to commence operation in 2021.
Guangxi				
Nanning Hongji (note 2)	-	15,000	In operation	Currently, products are mainly supplied to commodity housing projects in Nanning and neighbouring cities.
Nanning Wuhe	167,000	400,000	Under construction	Concrete batching plant (annual production capacity of 600,000 m <sup>3</sup> ) had commenced operation in December 2019; production line of precast concrete components is expected to commence operation in 2021.
Guigang Runhe	130,000	200,000	Under construction	Concrete batching plant (annual production capacity of 600,000 m <sup>3</sup> ) had commenced operation in November 2019; production line of precast concrete components is expected to commence operation in 2020.

**Note 1:** CR Cement holds 49% equity interests of the associate DongGuan RunYang United Intelligent Manufacturing Company Limited.

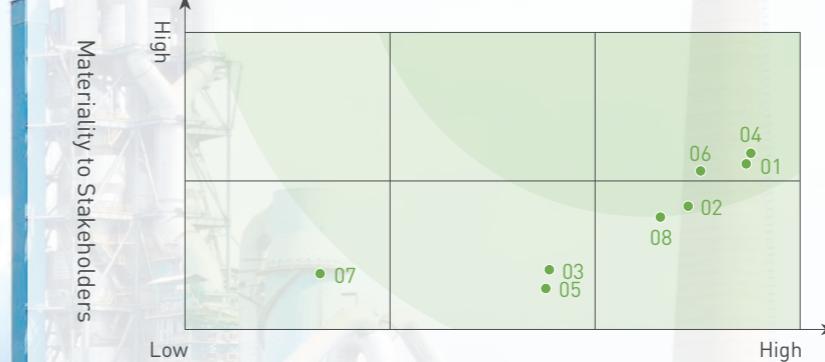
**Note 2:** CR Cement cooperates with Nanning Hongji Cement Products Co., Ltd in production.

CR Cement incorporates the concept of low-carbon environmental protection into our corporate gene, vigorously launches work on prevention and treatment of pollution, advocates for the development of a circular economy, and is committed to building a resource-saving and environmentally friendly enterprise. We take the path of innovative development in green environmental protection, transformation and upgrade in order to beautify the ecological environment and achieve green development for making greater contributions to the construction of a beautiful China.

# Energy Saving and Emission Reduction

## Build a Green Life'style'

**Two-Dimensional Matrix of Substantive Issues  
of Responsibilities to Environment**



- 01 Plan for sustainable development
- 02 Reduce the consumption of energy resources, and recyclable use of resources
- 03 Establish and improve environmental management system
- 04 Strict management of pollutants
- 05 Waste co-processing
- 06 Strengthen ecological protection
- 07 Actively tackle climate change
- 08 Support charity activities of environmental protection and implement green office

Total investment in environmental protection Unit: RMB million



Industrial waste utilized (note) Unit: '000 tons

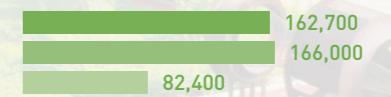


Note: Scope of statistics of industrial waste includes coal gangue, stone residue, de-sulphur gypsum, fly ash and blast furnace slag.

Investment in technological upgrade in energy-saving and emission reduction Unit: RMB million



Municipal solid waste co-processed Unit: tons



## Create "Green Factory" Build "Green Engine"



▲ Factory area of China Resources Cement (Wuxuan) Limited

At present, the constraints of achieving global sustainable development attributable to resources and environmental issues are increasingly prominent, and "green manufacturing" had gradually become the movement and trend of global development. "Green Manufacturing Project" has been included in "Made in China 2025", our country's first ten-year action plan for implementing the strategy of strong country of quality manufacturing. In the "Implementation Guidelines for Green Manufacturing (2016-2020)", the Ministry of Industry and Information Technology proposed the specific goal "to create one hundred green industrial parks and one thousand green model factories by 2020 for promoting ten thousand green products". Creation of green factories is a key part of constructing a green manufacturing system and a key task of implementing green manufacturing projects. Excellent model enterprises have been selected based on industries to set benchmarks, which drive more corporates to create green factories and jointly support the promotion of green manufacturing projects.

Creation of green factories and green mines has long been served as CR Cement's effective approach and important leverage point for transformation and upgrade. Our subsidiary China Resources



Cement (Wuxuan) Limited (abbreviated as "Wuxuan Cement") adheres to the development concepts of green, ecology and environmental protection during the development process, advocates for low-carbon operation and develops circular economy in order to continuously explore and strive to become a resources-saving and environmentally friendly model enterprise.

In 2017, Wuxuan Cement officially launched the creation of green factories, focusing on tasks of promoting coal-saving, power-saving, water-saving, clean production, intelligent manufacturing and implementation of relevant projects for the development of circular economy and striving to become a role model in the industry in the aspects of safety, environmental protection, energy consumption indicators, organizational efficiency, informatization, on-site management and green construction.

**In terms of comprehensive energy management,** Wuxuan Cement continuously improves the construction of energy management system. In 2012, the energy management system of production plant completed construction and commenced operation, which achieved real-time online monitor, statistics, storage and analysis of production data. Through statistical analysis, issues such as equipment failures

had been actively prevented and intervened in a timely manner, offering strong support on the technological upgrade for energy-saving, cost reduction and efficiency enhancement.

**In terms of environmental protection monitoring,** Wuxuan Cement actively initiated self-monitor on environmental protection by installing online monitoring systems of pollution sources at kiln front and kiln rear. Through the network with environmental protection department, the environment of the factory zone is monitored by entrusted third parties on a quarterly basis. The monitoring results are all in compliance with the standard requirements of the "Emission Standard of Air Pollutants for Cement Industry" (GB 4915-2013) and published on relevant public monitoring websites.

**In terms of technological upgrade for environmental protection,** Wuxuan Cement actively promoted the application of various new technologies for environmental protection, energy saving and emission reduction. They took the lead in Guangxi in putting the technological upgrade project of SNCR denitrification in operation at cement kilns. Comprehensive denitrification efficiency exceeded 60%, which had reduced exhaust emissions of cement kiln. The systematic static electricity dust collectors at kiln front and kiln rear were transformed into bag filters, hence reducing the emission of particulate matters, and its emission concentration was better than the national environmental protection emission standard.

**In terms of residual heat recovery and utilization,** Wuxuan Cement vigorously promotes advanced energy-saving technologies such as residual heat power generation and energy-saving grinding. Production line is equipped with 9 MW pure low-temperature residual heat recovery generation unit. The residual heat resources emitted at kiln front and kiln rear are made full use of for power generation, achieving an annual power supply of 64.5593 million kwh and meeting 1/3 of the electricity consumption of the production line, which has minimized

carbon dioxide emissions caused by coal combustion with significant benefits of energy saving and environmental protection.

**In terms of comprehensive utilization of resources,** Wuxuan Cement vigorously developed circular economy by launching research and application in cement production of industrial waste such as desulphur gypsum from thermal power plants and implementing comprehensive utilization of resources. Annual consumption of industrial wastes such as fly ash, coal slag, desulphur gypsum and shale exceeds 345,900 tons, which had effectively reduced the risk of polluting the environment of the neighbouring area.

**In terms of treatment and management of ecological environment,** Wuxuan Cement has integrated green upgrade, cement industrial sculpture, cement culture, safety culture and mine culture in gradually building five park areas of "industrial sculpture, China Resources culture, CR Cement culture, safety culture experience and mine culture", achieving the harmonious integration of "factory and environment, cement industry and culture, corporate and society". As of the end of 2019, the greening rate of factory area exceeded 35%. The trees make a pleasant shade and a beautiful environment.

In 2019, Wuxuan Cement successfully passed the assessment of green manufacturing by the Ministry of Industry and Information Technology and was selected as a national "Green Factory", and was awarded the title of "Green Mine" of Guangxi Zhuang Autonomous Region in the same year.

Wuxuan Cement's efforts and achievements in the process of creating a green factory have fully manifested CR Cement's proactive practice of the concept of ecological civilization and the results of our all-out efforts in green factory construction. Under the organization and leadership of CR Cement, our subsidiary production plants have raised awareness, have their mindset transformed, changed from passive to active, and combined with their actual situation when it came to formulating implementation plans for the construction of green factories, specifying target missions and measures, conscientiously implementing relevant national laws and regulations and fully promoting each green construction work. At the same time, they seriously organized and launched staff training, created a good atmosphere, improved the enthusiasm and initiative of employees, achieved all-staff participation and promoted in-depth development of green factory construction.

As of the end of 2019, a total of five production plants of CR Cement, namely, Tianyang Cement, Nanning Cement, Pingnan Cement, Wuxuan Cement and Heqing Cement were included as green factories in the register of national-level Green Manufacturing. Pingnan Cement, Wuxuan Cement, Shangsi Cement, Luchuan Cement, Longyan Cement and Jinsha Cement were included as green factories in the registers of provincial-level or autonomous regional-level Green Manufacturing. Meanwhile, as of the end of 2019, CR Cement had completed ecological restoration of its mines with a cumulative area of approximately 2,228,700 m<sup>2</sup>. A total of 16 mines had been included in the registers of provincial-level and autonomous regional-level green mines, among which, 8 mines had passed the selection of national-level green mines.



▲ Cement industrial sculpture of China Resources Cement (Wuxuan) Limited

## Strengthen Environmental Management

With strict reference to relevant requirements on environmental laws and regulations such as the "Environmental Protection Law of the People's Republic of China", CR Cement had established the "EHS Management Series" of the "Management Manual" of the Company and sound environmental management system, and issued definite requirements on the monitor and management of pollutant emissions relating to co-processing projects. We inspect latent hazards and eliminate risks by use of identification of environmental impact factors of production plants, identification and upgrade of lists of laws and regulations. In addition, the Company sets target values for the star-grading management appraisal system based on the industry or internal benchmarking results. Performance on the environment, health and safety aspects of every cement production plant is comprehensively appraised, which further enhances the management standard of production plants and fosters corporate sustainable development.

As of the end of 2019, Tianyang Cement, Nanning Cement, Pingnan Cement, Wuxuan Cement and Heqing Cement had been included in the national-level Green Manufacturing register as "Green Factories". Pingnan Cement, Wuxuan Cement, Shangsi Cement, Luchuan Cement, Longyan Cement and Jinsha Cement were included in the provincial-level or autonomous regional-level Green Manufacturing registers as "Green Factories". Baise Concrete received the commendation of "National Three-Star Green Building Materials" in November 2019, and was awarded the title of "Green Demonstration Factory in the National Ready-mix Concrete Industry" by the Ready-mix Concrete Branch Association of the China Concrete & Cement-based Products Association in December 2019.

## Save Energy Resources

### Enhance Energy Utilization Rate

With strict reference to the policy "Supervision and Management of Energy Saving and Emission Reduction" and in reliance on the energy management system, resources consumption during production process is measured for the assessment of operational performance of the production plants in order to continuously enhance the utilization rates and economic benefits of energy and resources. In addition, the Company persistently encourages energy saving, mainly through the use, saving and recycled use of energy, technological upgrade on emission reduction, R&D and innovation. Enhancement of energy management standards has been driven by informationization and intelligentization. Considerable achievements had been made on the aspect of low-carbon environmental protection.

### Residual Heat Recovery Utilization

CR Cement insists on the application of new technology and new equipment of high standards. All the cement and clinker production plants are equipped with pure low-temperature residual heat power generation system, which would recycle and convert the residual heat generated during the process of cement production into electricity. It raises the efficiency of energy use, reduces coal consumption, alleviates atmospheric pollution and greenhouse effect, and brings about good economic, social and environmental benefits. In 2019, approximately 2,083.8 million kwh of electricity was generated from residual heat, representing approximately 32.1% of the Company's electricity consumption required for production of cement products, which was equivalent to reducing the emissions of approximately 704,300 tons of carbon dioxide every year.



▲ As of the end of 2019, 5 cement production plants were entitled national-level "Green Factories"

6 cement productions were entitled provincial-level or autonomous regional-level "Green Factories"



▲ China Resources Cement (Lianjiang Fengcheng) Limited was jointly selected as shortlisted energy-efficient "pace-setter" enterprise in major energy-consuming industries in 2019 by the Ministry of Industry and Information Technology of China and the State Administration for Market Regulation.



Pure low-temperature residual heat power generation: Power generation using the residual heat of medium-and-low temperature waste gas discharged from the emission ends of the kilns of the cooling machine, with no fuel consumed or pollutants produced.

## Promote the Use of Recyclable Packaging Bags

The proportion of cement sold in bags by the Company decreased from 38.9% in 2018 to 35.6% in 2019, reducing the demand for product packaging. We promoted the full utilization of recyclable packaging bags to reduce waste of resources and energy. In 2019, consumption of packaging materials decreased by approximately 9.3% compared to 2018, and consumption intensity of packaging materials was 2.17 kg per ton of cement packed in bag, representing a decrease of approximately 0.91% compared to 2018.



▲ In 2019, the Company's consumption of packaging materials decreased by approximately 9.3% compared to 2018

## Practice Emission Reduction and Recycling

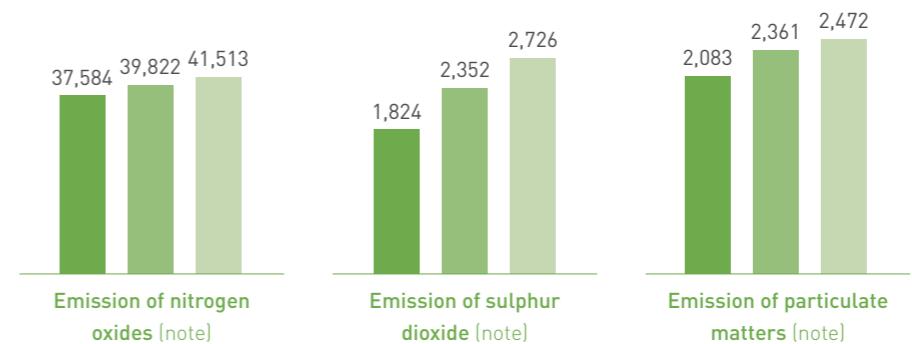
### Monitor on Pollutants

CR Cement has established a platform at headquarters to monitor the emissions of environmental pollutants, thereby achieving the headquarters' real-time monitor and forecast on pollutant emissions of all production lines. The risk management capability on pollutant emissions has been further enhanced by timely reminders to urge production plants to verify abnormal data through the platform. In 2019, all cement production plants of the Company have completed the publication work of pollutant emissions situation of production lines, proactively disclosed the real-time pollutant emissions data of all production lines to the community and consciously accepted scrutiny from the society. All the cement production plants of the Company have obtained permits for pollutant emissions. Our emission concentrations of nitrogen oxides, sulphur dioxide and particulate matters are better than the national standard limits of pollutant emissions, placing us at a leading position in the industry.

### Average emission concentrations of pollutants emitted from the major discharge outlets of cement production plants, benchmarked to relevant national standards

Unit: mg/m<sup>3</sup>

Statistical Indicator	Emission Standard of Air Pollutants for Cement Industry (GB 4915-2013)		Average emission concentrations of pollutants emitted from the major discharge outlets of the Company's cement production plants		
	Ordinary emission limits	Special emission limits	2019	2018	2017
Nitrogen oxides	400	320	240	254	259
Sulphur dioxide	200	100	13	18	16
Particulate matters	30	20	9	11	11



Note: Scope of statistics includes the major discharge outlets of the Company's cement production plants.



▲ Public display board of Hongshuihe Cement's real-time pollutant emission data

## Desulphurization and Denitration Technologies

CR Cement continuously improves the levels of environmental protection of production lines to achieve full coverage of denitration systems at all our cement and clinker production plants. Denitration systems at all our production lines are in normal operation. We selectively applied desulphurization technology according to the actual needs of operation of each production line to ensure that emission of sulphur dioxide meets the emission standard. In 2019, the Company actively researched on intelligent denitration technology of highly effective selective non-catalytic reduction (heSNCR), which had integrated multi-level combustion technology to further reduce the emission concentration of nitrogen oxides. Pilot work is planned to roll out at our cement production plants in 2020. As of the end of 2019, the Company completed the construction of 3 sets of wet-process desulphurization systems and 11 sets of composite desulphurization systems.

## Management on Emission of Particulate Matters

CR Cement strictly implemented management on the emission of particulate matters in the production process. All our cement and clinker production plants are equipped with bag filters. We actively apply the mobile dust collection technology of cement packaging trucks at some production lines and implement technological upgrade of cement packaging machines. In 2019, the Company had fully completed the work on dust treatment and management of cement packaging and loading and achieved full coverage on the application of mobile dust collection technology of cement loading, which had further improved the working environment of cement bagging and loading, enhanced the automation level of equipment and effectively reduced emission of particulate matters.

Jiangmen Cement had successfully applied the automatic bagging technology at its cement silo. The pilot project for the application of automatic bagging technology and automatic loading technology at Nanning Cement had passed acceptance inspection in late 2019 and had been recognized by the competent authorities including the National Health Commission of China.

Hepu Cement, Guigang Cement, Yangchun Cement and Fengkai Cement have applied a new type of bag filters in high temperature for ultra-low emissions. The emission concentrations of particulate matters had been reduced to below 10 mg/m<sup>3</sup>, which are far lower than the national special emission limits.

CR Cement was invited to participate in drafting the industrial standard JB/T 13416-2018 "Filter Materials Used in Bag Filters for the Treatment and Management of Dust Emission in Flue Gas by Cement Industry".

### Knowledge Extension

**Denitration system:** A system which prevents environmental pollution by excessive emission of nitrogen oxides from the combustion process within the cement kilns through reducing the amount of nitrogen oxides generated and eliminating nitrogen oxides in the flue gas.

### Knowledge Extension

**Bag filter:** A dry-type dust filter device for collecting fine, dry, non-fiber dust through the application of the main principles of bag-type fiber filter and gravitational settling.



< The research achievements of filter materials for ultra-low emissions and low-emission high-performance bag filters were outstanding, and were accredited as the "key and advanced R&D achievements" of "Two Second-Generation" Technology and Equipment Innovation and Upgrading Research and Development by the China Building Materials Federation.

## Management of Carbon Emissions

CR Cement places strong emphasis on the work for tackling climate change, actively reduces carbon emissions through production operation and R&D of products following the directions of the target requirements on carbon emissions issued by the government and the industry.



### In terms of production operation

The mines of Fengkai Cement production plant are approximately 50 km away from the port terminal. In order to solve the issue of limestone transportation, the Company invested in the construction of a 52 km long belt corridor, the central transportation artery which connected the limestone quarry, production plant and port terminal. The project commenced the first phase of construction in September 2008, and a double-belt corridor of 40 km in length had completed construction and commenced operation. The second phase of the project for a belt corridor of 12 km in length is under construction. In 2019, the major works done for the second phase of the project involved road surface of the corridor, tunnels, sidewalks, repairs and construction of side slopes at cave entrances and construction of pipe shed. Compared to vehicle transportation, the long belt corridor of Fengkai Cement can significantly reduce carbon dioxide emissions.

We actively conduct R&D on low-carbon products and technology. Low-carbon cement has the features of low consumption of resources and low burden to the environment, and there would be approximately 10% reduction in carbon dioxide emission during combustion process compared to traditional Portland cement. Low-carbon technology can enhance combustion efficiency, decrease coal consumption of unit products, and reduce emissions of carbon dioxide and other exhaust gas. As of the end of 2019, various cement and clinker products of Luoding Cement, Tianyang Cement, Hongshuihe Cement, Pingnan Cement, Nanning Cement, Guigang Cement and Heqing Cement had passed the low-carbon product certification.

Besides, 8 production plants in Guangdong and 5 production plants in Fujian of the Company had settled the carbon credit quota for 2018, and the calculation of quantity of carbon emissions for 2019 had been done in accordance with the "Guidelines for Accounting and Reporting Greenhouse Gas Emissions for Chinese Cement Manufacturing Enterprises (Trial)" in preparation for the future unification of national carbon market.

## Composite Treatment and Management of Wastewater

CR Cement actively promotes conservation and recycling of water, and initiates the pilot comprehensive composite treatment and management on the collection and recycled use of industrial wastewater, domestic wastewater and rainwater in the cement industry. Strict procedures and indicators for treatment of domestic wastewater had been formulated with reference to national first-class emission standards. The Company has equipped all the cement and clinker production lines with intensive biochemical water treatment system. Treated industrial wastewater and domestic wastewater is fully recycled for uses in residual heat power generation systems, cooling water production systems, gardening in the factories and dust settling at storage yards. Initial rainwater is collected for direct recycled use. All wastewater is not discharged.

Following the pilot trial at Nanning Cement and Fengkai Cement, the Company plans to promote the implementation of the project for recycling and composite utilization of wastewater at 7 cement production plants including Pingnan Cement in 2020, highlighting the requirements for technique advancement and preference for lower operating costs under the condition of stable operation, thereby achieving the goals of zero discharge of wastewater and composite utilization of water resources. In 2019, water consumption of the Company was 32,545,608 tons, and intensity of water consumption for the production of cement and clinker was 360.4 kg per ton of cement produced.

## Composite Utilization of Resources

CR Cement exercises reasonable management and control on the solid waste generated during the production and operation process in accordance with the "hazard-free, mass-reducing and recyclable" principle. Waste-free or less-waste techniques had been adopted at mining areas. To achieve zero discharge of waste residue, harmless wastes such as waste slag and stones are all compositely utilized. We recycle the waste oil generated in the production process for lubrication of mechanical equipment. Oil barrels are recycled by the original manufacturers or handled by qualified institutions.

The Company is dedicated to research and exploration of the application of industrial wastes in cement production. Through optimization of the prescription of raw materials, the project on composite utilization of limestone residue resources was launched to achieve industrialization of utilization of mining waste resources, and enhance composite utilization of resources and resourceful recyclability of social waste, which makes proactive contribution to environmental protection of the community.

Industrial waste utilized [note] Unit: '000 tons



Note: Scope of statistics of industrial waste includes coal gangue, stone residue, de-sulphur gypsum, fly ash and blast furnace slag.

## Attach Great Importance to Treatment and Management of Mines

CR Cement places strong emphasis on treatment and management of mines. "Ecology, environmental protection, safety and intensive utilization of resources" have always been the primary focus of our work. We confirm the work approaches of "scientific planning, reasonable mining, resources conservation, promotion of harmonious development between human beings and the nature" as well as "green, ecologically and environmentally friendly mining enterprise". Restoration of mines is included in the production, operation and long-term development plans of the Company. As of the end of 2019, the Company had completed ecological restoration of its mines with a cumulative area of approximately 2,228,700 m<sup>2</sup>. A total of 16 mines were included in the registers of provincial-level and autonomous regional-level green mines, and 8 mines had passed the selection of national-level green mines.



▲ Nanning Cement passed the selection of national-level green mine

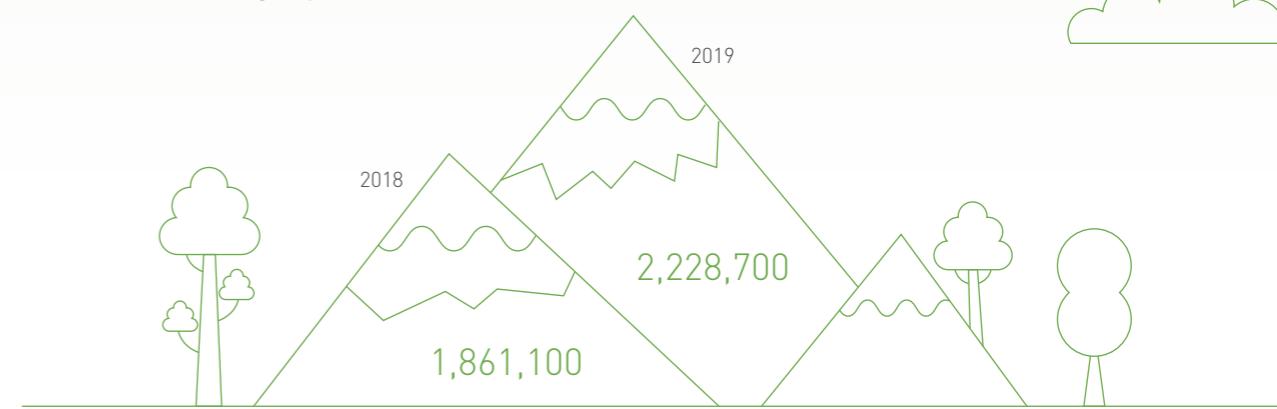
### For new projects

Environmental assessments are conducted and damages on the ecology in the course of development and construction are avoided to the greatest possible extent. For the mining areas, measures are taken for recycled use of water resources in the mines, zero discharge of wastewater, timely collection and recycled use of waste oil and application of shock reduction and weak shock blasting technologies in order to reduce the impact of production and operation activities on ecological environment and hence effectively ensure existence and continuity of species in the region.

### Before the closure of a mine

We would undergo treatment, management and restoration of the environment at the mine in strict compliance with the "Project of Mining Geo-Environmental Protection and Integrated Renovation" and the "Land Rehabilitation Plans". The concept of "biodiversity" has been actively introduced by planting various vegetations with reasonable mix and match for a coordinated landscape of the regreened mining area and the surrounding natural environment. The green coverage ratio of the mining area reached 100%, with a gradual restoration of ecological balance. It would be inspected for acceptance by relevant competent authorities of natural resources.

Cumulative area of ecologically restored mines Unit: m<sup>2</sup>



### Heqing Cement systematically launched mine restoration work in phases

Since 2012, Heqing Cement has systematically launched mine restoration work in phases. More than 10,000 seedlings such as creepers, poplars, holly and oleanders have been purchased and planted at the Company's mines. Grass seeds have been continuously dispersed, and the construction of high-altitude pools was invested for the use of mine restoration. By adopting the proposal of "concretes biotechnics slope (CBS)+planting evergreen seedlings on side slopes", mine restoration had been implemented in phases to raise the seedling survival rate. The ecological environment of the original mining land is restored after the stages of project reclamation, biological reclamation and monitoring, management and restoration.

Heqing Cement insists on continuously restoring the newly formed tiered platforms on side slopes in a timely manner every year. A mode of mining simultaneous to restoration had been created to ensure simultaneous progression of production and environmental protection and the mutual growth of economic benefits and social benefits. As of the end of 2019, ecological restoration of mines with a total of approximately 140,000 m<sup>2</sup> was completed.

In June 2019, Heqing Cement initiated green mine construction. After ample preparation, they smoothly passed the audits on the three levels of prefecture, province and nation on the first attempt and was successfully included in the 2019 register of national-level green mines.

## Promote Co-Processing

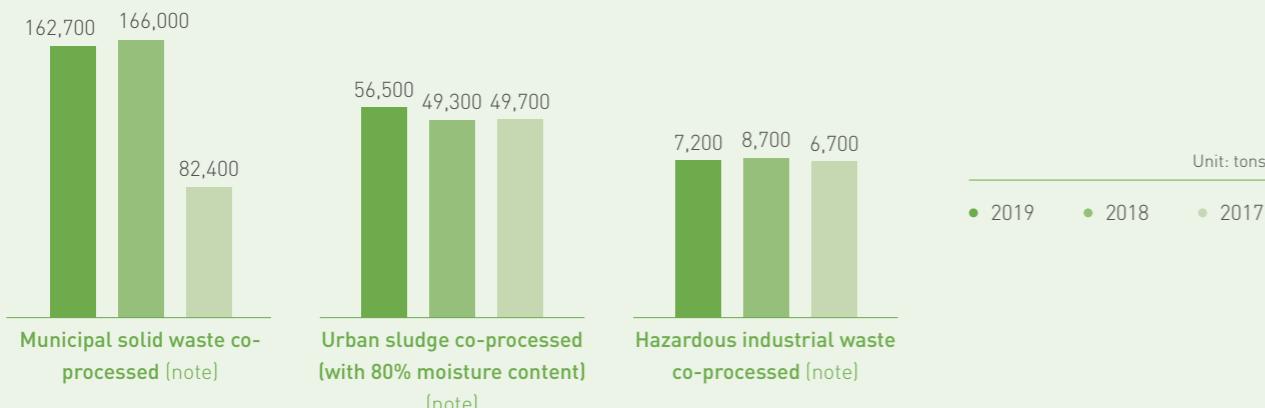
In reliance on independent innovation, CR Cement promotes co-processing projects in the three scopes of municipal solid waste, urban sludge and hazardous industrial waste in order to fulfil its social responsibility whilst supporting corporate transformation of environmental protection and achieving sustainable development. Compared to traditional landfilling, co-processing of solid waste by use of cement kilns enables the Company to substantially save land resources and eliminate poisonous pollutants such as dioxin by effective use of heat inside cement kilns, thereby achieving "hazard-free, mass-reducing and recyclable" processing, becoming "urban symbiosis" and creating a healthier living environment for local residents in the vicinity of the projects. As of the end of 2019, the Company had 8 co-processing projects in total.

### List of Co-processing Projects

Project Name	Type	Annual Processing Capacity (tons)	Status
Binyang, Guangxi	Municipal solid waste	110,000	In operation
Tianyang, Guangxi	Municipal solid waste	180,000	In operation
Nanning, Guangxi	Urban sludge (note 2)	110,000	In operation
Zhushui, Guangzhou (note 1)	Urban sludge (note 2)	300,000	In operation
Yuebao, Guangzhou (note 1)	Urban sludge (note 2)	300,000	In operation
Changjiang, Hainan	Hazardous industrial waste	30,000	In operation
Midu, Yunnan	Municipal solid waste	110,000	In trial operation
Fengqing, Yunnan (note 1)	Municipal solid waste	110,000	In trial operation

Note 1: Located in the cement production plants of our associates and joint ventures.

Note 2: The Nanning project co-processed wet sludge of 80% moisture content. The Zhushui project co-processed dry sludge of below 40% moisture content. The Yuebao project co-processed dry sludge of below 40% moisture content in Guangzhou City on an urgent basis.



Note: Relevant data on the cement production plants located in associates and joint ventures was excluded.

### Knowledge Extension

**Co-processing by use of cement kilns:** The processing of solid wastes which meet the requirements for entering kilns, whether with or without pre-treatment, by inputting the solid wastes into cement kilns for combustion, taking advantage of the features of cement kilns including high temperature, alkalinity and large capacity, at the same time of production of cement and clinker.



▲ Municipal solid waste co-processing project in Tianyang, Guangxi completed construction and commenced operation



▲ Municipal solid waste co-processing project in Midu, Yunnan completed construction and commenced trial operation

## Advocate Green Culture

CR Cement continuously advocates the concept of green development and calls for all-staff joint construction of a resources-intensive and environmentally-friendly enterprise. We promote OA and ERP office systems and advocate paperless office; strengthen management on office equipment to reduce energy waste; use water-saving appliances to reduce water consumption; recycle plastic and paper to reduce waste generation. Commuter buses were offered to employees at some production plants and some operating regions for work commutes. We advocate for public transportation, bicycles and walking as alternatives to private cars for work commute. Environmental protection knowledge is popularized to all employees by posting promotional posters and issuing promotional leaflets. Employees are encouraged to participate in environmental protection themed activities such as "World Environment Day", "National Energy-Saving Publicity Week" and "National Low Carbon Day" to further enhance employees' awareness on energy saving and environmental protection.



▲ Zhanjiang Cement's bulletin board for promotion of "World Environment Day"

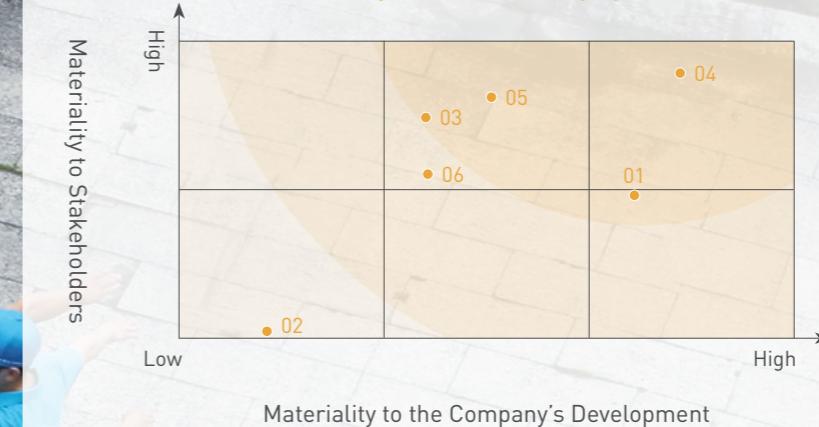


▲ Nanning Cement launched voluntary tree planting activities

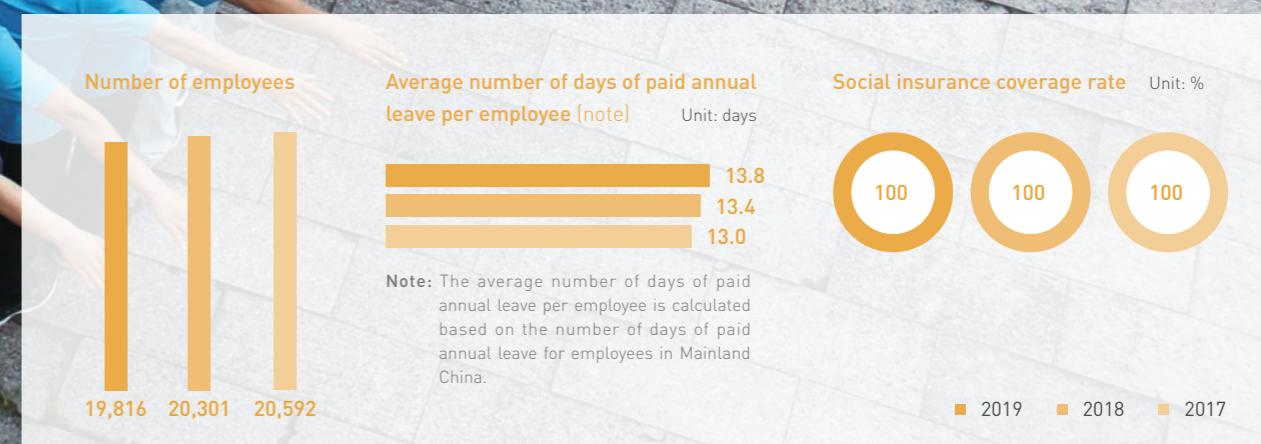
Adhering to the objectives of "respecting human value, developing human potential, and enhancing human spirit" for talent work, CR Cement cares for and kindly treats employees in terms of their lives, emotions and growth, creates a safe and healthy working environment for employees, builds a platform for value achievement, and mutually shares the results of corporate development with employees.

# Together with Us and Resources Heart Build Talents in the Industry

**Two-Dimensional Matrix of Substantive Issues  
of Responsibilities to Employees**



- 01 Optimize employee compensation and benefits
- 02 Streamline development path of employees
- 03 Emphasize employee integrity construction and integrity work
- 04 Care for employees' occupational health
- 05 Compliant employment to protect the rights and interests of employees
- 06 Care for employees and assist employees in need



## Take out commercial insurance Protect the health of employees

In 2019, employee Little A was diagnosed thyroid cancer during the annual body check organized by the Company, and returned to work quickly after active treatment. Little A did not take out commercial insurance by himself. Once learned of Little A's illness, a colleague of the Human Resources Department quickly contacted him and introduced the coverage and claims settlement method of the Company's collective commercial insurance in detail. After submitting relevant information, Little A successfully received the full amount of claims.

Since 2009, in addition to paying social insurance for Mainland employees and making contributions of the Mandatory Provident Fund for Hong Kong employees in full, CR Cement has also taken out commercial insurance for each employee and their two close family members. The insurance covers the three aspects of critical illness, accident and life insurance as a supplement to social security and the Mandatory Provident Fund, which helps employees to be able to get timely treatment when they are sick or sustain injuries when encountering accidents. So far, the Company has handled over 800 insurance claims for employees and their family members, and the amount of insurance claims received was approximately RMB80 million. In 2019 alone, 130 claims from employees and their family members were accepted.

Through market research, CR Cement conducts annual insurance tender in the form of bid invitations and chooses to cooperate with insurance suppliers which meet the Company's insurance projects and service needs in a fair, open and transparent manner.

For the colleagues who need to apply for claims of critical illness or accident, whether mild or severe, being able to get a certain amount of insurance claims is not only a psychological comfort for the colleagues who apply for claims, but also a kind of guarantee for their family's quality of life.

CR Cement's investment in employee commercial insurance has gradually improved the staff benefits system, minimized the worries of employees and put up the "protection umbrella" of health for employees.



Over 800 insurance claims have been handled for employees and their family members

Amount of insurance claims received was approximately RMB80 million



▲ Interesting athletic meet for staff, outward bound activities and basketball games

## Safeguard the Rights and Interests of Employees

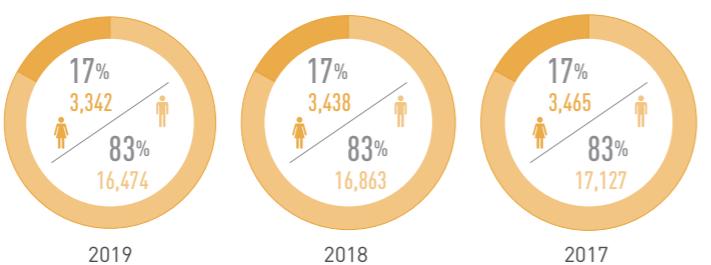
### Protect Human Rights

CR Cement is in strict compliance with laws and regulations including the "Labour Law of the People's Republic of China" and the "Labour Contract Law of the People's Republic of China". By adhering to the principle of equal employment, we prohibit all discrimination due to differences in gender, age, territory, education, religious belief, nationality, race, sexual orientation and disability. We oppose to employment of child, forced labour, overtime work, harassment and abuse. We effectively protect the legal rights and interests of employees, and ensure that employees enjoy fair entitlements in terms of recruitment, labour, salary, training, promotion, compensation and rest periods. As of the end of 2019, 21.0% of the Company's employees were of ethnic minorities and 59 employees had disabilities.

**Employees by Geographical Region**



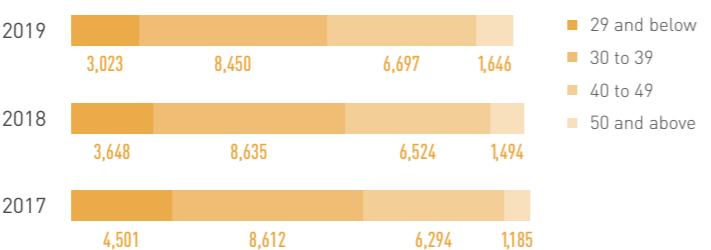
**Employees by Gender**



**Employees by Function**

Statistical Indicator	2019	2018	2017
Management	402	393	390
Finance, administration and others	2,485	2,648	2,672
Production staff	11,627	11,753	11,996
Technical staff	4,420	4,618	4,633
Sales and marketing staff	882	889	901

**Employees by Age**



## Remuneration and Welfare

CR Cement established a sound system to benchmark employees' remunerations with the market, built a remuneration management system based on values of the roles and in accordance with the contributions to performance and personal capabilities, gradually improved the market competitiveness of remunerations of core roles and mutually shared the corporate operational benefits with employees to attract and retain excellent talents and employees in core roles. Meanwhile, the Company continued to optimize and offer various benefits and entitlements to its employees. Timely and full contributions to the "Five Social Insurances and One Housing Fund" are made for Mainland employees, and corporate annuity had been set up for Mainland employees. Contributions to the Mandatory Provident Fund are also made for Hong Kong employees. Targeted body check packages were continuously provided to employees. Commercial insurances such as critical illness, accidents and life insurance were taken out for employees and their two close family members, which promoted the care for employees and improved protection to employees.

## Democratic Management

CR Cement continuously improve the timely and effective mechanism and channels for negotiation and communication to actively promote democratic management. Abiding by the principles of fairness, equality and negotiation for unanimous consensus, we enter into employment contracts with employees in accordance with the requirements of labour law to specify the rights and obligations of both employers and employees. We continuously improve the timely and effective mechanism for negotiation and communication. Smooth feedback channels are opened for employees to provide real-time feedback opinions and demands through diversified channels such as employees' congress, whistle blowing hotlines, whistle blowing emails and OA forum. Opinions and suggestions from employees are sought level by level when formulating systems and policies involving vital interests of employees.

## Occupational Health

CR Cement strictly abides by the "Law of the People's Republic of China on the Prevention and Treatment of Occupational Diseases" and formulated the "Regulations of Occupational Health Management" accordingly. 100% coverage of OHSAS 18000 Occupational Health and Safety Management System and 100% coverage of staff body checks are ensured. We launched extensive remedial work at production plants to minimize hazards of dust and noise. We were dedicated to building a healthier working environment. In 2019, a series of activities during the promotion week such as keynote presentations, staff forums and knowledge lectures were launched around the theme of "Healthy China in company with Occupational Health". Knowledge on prevention and treatment of occupational diseases and healthy work concepts were effectively disseminated and publicized with the aid of videos on large LED screens at offices and canteens, WeChat, QQ and other platforms to strengthen the self-protection awareness of the mass employees. Throughout the year, approximately 13,049 participants were in attendance.

In addition, the Company proactively pays attention to the occupational mental health of employees and specifically established positions of occupational health management engineers who are responsible for the management work of occupational health and mental health. In 2019, with a view on general health, the Company's EHS Department exchanged on staff mental health work with professionals from various companies, collected employees' mental health cases, sorted and discussed the relationship between staff mental health and corporate safety. We prepared the "Staff Mental Health and Corporate Safety" courseware and incorporated staff mental health courses into the subjects of training courses on class leaders' safety management, concrete traffic safety management and production safety management organized by China Resources Cement College. Through learning from the courses taught, we stimulated the enthusiasm of students to discuss and interact and promoted the orderly launch of staff mental health work. In the daily routine of observation activities for safety behaviours, pre-shift meetings and pre-operation safety notifications, each subsidiary enterprise is concerned with the mental state of employees and understands the psychological status of employees to take good precautions for operational safety.



▲ In 2019, a series of activities around the theme of "Healthy China in company with Occupational Health" during the promotion week attracted the attendance of approximately 13,049 participants

## Assist Staff Development

### Staff Training

CR Cement puts very strong emphasis on building teams of talents and continuously improves the mechanism for talent development and various talent cultivation systems in order to assist staff growth and becoming talented. In 2019, relying on the platform of China Resources Cement College and based on the requirements of strategic corporate development and management as well as staff growth, the Company remodeled the talent cultivation system with projects, courses and lecturers as pillars and with support system as security. We help further specify the functional position of China Resources Cement College and further consolidate fundamental management by coordinating pilot construction of classes and teams, promoting basic-level employees to obtain internal certification on required knowledge and required skills, continuing to optimize leadership and projects for training new employees, building self-developed courses and database of internal lecturer resources, and improving the training system.

#### Offline training

In 2019, the Company held a total of **536** face-to-face courses for a total training duration of approximately **89,600** hours, with approximately **2,400** participants in attendance.



#### Total training performance

In 2019, the total duration of online and offline training relating to the Company's staff development was approximately **254,900** hours and the average training duration per employee was approximately **13** hours.

#### Online training

In 2019, the Company introduced **30** programmes of special-themed series from external sources,

and self-developed over **30** mini-courses and **55** professional courses internally.

A total of over **120** online courses were newly uploaded,

and over **20** sessions of special-themed elective learning were launched.

During the year, approximately **19,300** participants attended online training for a total duration of approximately **165,300** hours.

- "Create craftsman's culture to activate basic-level cells - TWI empowerment and certification practice based on 3M2T class and team building" was commended as the "Best Practical Case Study for Talent Development" of China Resources Group.
- The seventh camp in Southern China of the "Future Stars" training camp was honoured as the "Most Improved Award" of China Resources Group.
- China Resources Cement College was awarded the First Place again in the annual selection of "Excellent Professional College" of China Resources University.

"Through a week of closed study, I learned a lot of management skills. At the same time, through the sharing of business experience in excellent production plants, finance and intelligentization, I have an updated understanding of human resources and administrative work of the prefabricated construction business. When returning to work, I will continue to work hard and continue to improve, in order to be a qualified middle-level manager as a successor of preceding learning and a predecessor to inspire others!"

—Ji Lingli, Deputy Manager, Human Resources and Administration Department, Guangxi China Resources Prefabrication Construction Limited

After training and studying, I fully understood my shortcomings and felt the importance of learning. After returning to work, I must learn diligently, think independently, be happy to share, and apply what I had learnt to good use in practice in order to give full play to the role of a middle-level manager in the company and contribute to the company's development with my power!

—Guo Zhaofeng, Assistant Sales Manager, Changzhi Cement of Shanxi Region



▲ Second phase of "Run Xiaofeng Deep Blue Scheme" qualified middle management training



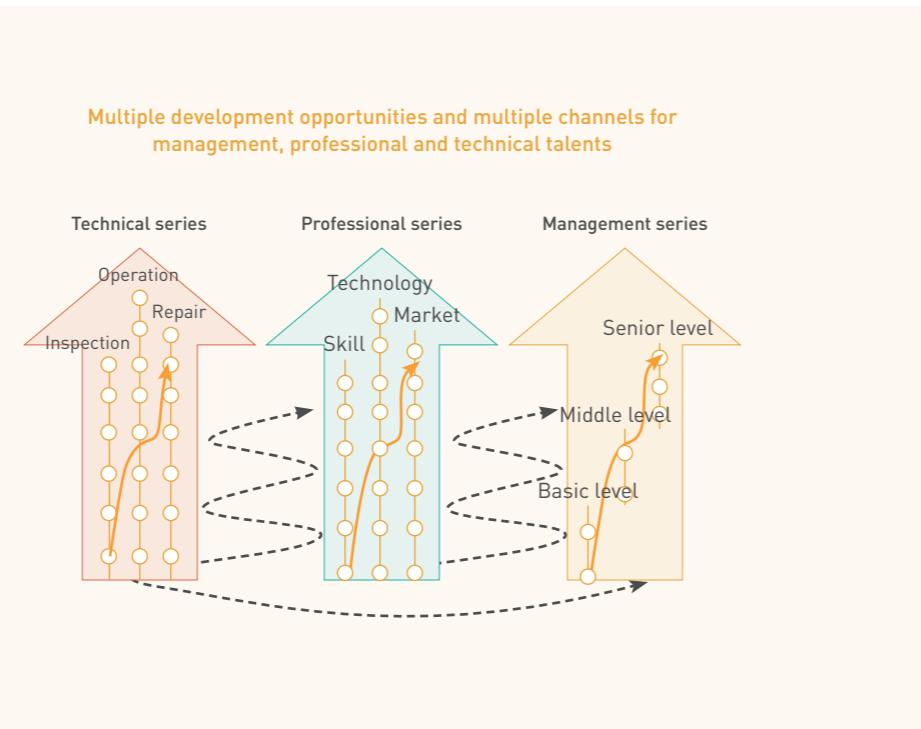
▲ Training on sludge co-processing project by use of cement kilns



▲ The seventh camp in Southern China of the "Future Stars" training camp was held

## Career Promotion

CR Cement created a broad development platform and opportunities for employees to display their talents. We organized excellent managers to perform rotations across business units, businesses and regions to expand professional horizons, refine business thinking and improve management skills. Through talent inventory and democratic recommendations, we select a group of young talents with high potential and accelerate the growth of these young talents through special training, mentor counselling, subject research, rotation training and attendance at meetings by invitation. The system of criteria for appointing professional and technical personnel was amended to regularly conduct job appraisal. We proactively organized a series of "Excellent Craftsmen" programmes such as vocational practical skill training, technology competitions and talent shows. We actively cultivate "knowledgeable, skillful and innovative" talents in order to ensure the secured supply of talents for the Company's high-quality development.



## Create Prosperous Homes

### Care for Employees

CR Cement is dedicated to creating working environment and team ambience. Various group activities were organized for better physical and mental health of our employees, such as staff birthday parties, festival celebrations, sports activities, calligraphy competitions and fitness activities, which enriched the cultural lives of our employees and promoted their comprehensive development.



▲ Long-term service award presentation ceremony



▲ In 2019, the Company organized an interesting athletic meet for headquarters staff combined with physical fitness, brand promotion, interesting athletic meet, family activities, group birthday party and long-term service award presentation ceremony, which had further enhanced our headquarters staff's cohesion and sense of belonging.

## Care for Women

CR Cement focuses on protecting the rights and interests of female employees. The requirements for maternity leave and lactation leave for female employees are fully implemented. "Nursing rooms" are set up for female employees. Equal career development opportunities are offered to ensure that female employees are entitled to non-differentiated treatment of remunerations and benefits. Besides, the Company provided female employees with personalized benefits such as organizing activities of International Women's Day and annual body check projects targeting female employees to raise the sense of belonging and happiness of our female employees.



▲ Beihai Concrete organized a tour of Expo Park for female employees



▲ Huizhou Concrete organized team building activities of Women's Day

## Hardship Assistance

CR Cement vigorously propagates the spirit of mutual assistance and friendship, and uses the power of groups to resolve the major difficulties encountered by individual employees and their families. With the establishment of the "China Resources Cement Gratitude Fund", the Company encourages employees to make voluntary donations every year and sets up a payment mechanism to match the employees' donations in the same amount. The donations shall be used for special funding assistance to employees in need and in illness. We regularly visit employees in need and their families with solicitude and send warm regards and best wishes during festivals in order to understand their practical difficulties and needs, care for and follow up with the improvement on their living conditions. In 2019, "China Resources Cement Gratitude Fund" raised donations of approximately RMB1,157,000 in total, and 36 employees in need and in illness were subsidized with a total amount of approximately RMB969,000.



▲ In 2019, "China Resources Cement Gratitude Fund" raised donations of approximately RMB1,157,000

Subsidies of approximately RMB969,000 were distributed

Saving and assisting 36 employees in need and in illness



▲ The Labour Union of headquarters, Guangdong Region and Jiangmen Concrete jointly organized the "Blooming Chinese Talent and Flying Resourceful Heart" reading sharing session cum staff birthday party in June



◀ "Cement Branch Association of Runma Association" participated in the 2019 Shenzhen Nanshan Half Marathon



◀ Shenzhen headquarters organized the "Blooming Chinese Talent and Flying Resourceful Heart" reading sharing session cum staff birthday party in May

CR Cement maintains a "customer-oriented" principle and upholds the core values of "honesty and trustworthiness". We carefully protect the rights and interests of customers and consumers, and wholeheartedly provide customers with quality products and services. With our own advantages in operational management, research and development of technology and concept innovation, we contribute to excellent practices in the cement industry, lead the green transformation of the industry and promote the sustainable development of the industry.

# Precise Cement Engineering

## Build Projects with Craftsman's Spirits



▲ Ceremony for shipping nuclear cement of China Resources Cement (Zhangping) Limited

Two-Dimensional Matrix of Substantive Issues  
on Responsibilities to Customers



- 01 Strengthen product quality management
- 02 Reinforce intellectual property management
- 03 Focus on innovation and intelligent manufacturing
- 04 Provide diversified products
- 05 Protect the rights and interests of customers and optimize customer service

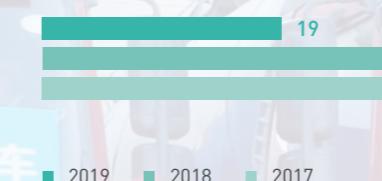
Passing rate of product quality Unit: %



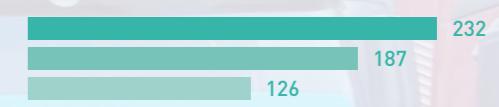
Handling rate of customers' complaints Unit: %



Number of new patent licenses



Number of patents and patent applications



2.7

## R&D of nuclear power cement

### Provide customers with quality products



▲ Ceremony for shipping nuclear cement of China Resources Cement [Zhangping] Limited

In 2017, China Resources Cement (Zhangping) Limited (abbreviated as Zhangping Cement) discovered from market research that there were numerous nuclear power projects under construction and planned to be built in Southern China. The demand quantity for nuclear power cement was relatively large and there was an urgent need for cooperation with cement enterprises qualified for the production of Portland cement P.N42.5 for nuclear power engineering.

In order to meet the needs of customers in the regional market, after careful preliminary research and substantiation, Zhangping Cement decided to launch R&D of Portland cement for nuclear power engineering, obtain the production permit of "Portland cement for nuclear power engineering" and adopt differentiated product competition strategies to improve corporate profitability.



In March 2017, Zhangping Cement organized and established a task force for the innovation project of nuclear power cement. In the preliminary phase of systematic organization and preparatory work, members of the task force carefully looked up the information of process and quality related to nuclear power production, and systematically analyzed and studied possibilities of production. Through exchanges and studies, they grasped the requirements for process control of nuclear power cement, key points and difficulties of quality control. They researched and formulated operational rules for the project of testing the quality of nuclear power cement, and researched on the mines in the neighbouring areas to search for suitable raw materials for production of nuclear power clinker.

After continuous trial productions and improvements, in May 2017, Zhangping Cement successfully developed nuclear power cement which met the national standards. All its major quality control indicators were substantially better than the requirements of the national standards and reached a leading level in the domestic cement industry. In August 2017, Zhangping Cement formally obtained the "Permit for Production of Portland Cement for Nuclear Power Engineering", becoming the first cement enterprise in Southern China which obtained such a production permit.

In March 2019, nuclear power cement officially started to be delivered, with a total sales of approximately 40,000 tons that year. At present, nuclear power cement had been successively supplied to Zhangzhou Nuclear Power, Ningde Xiapu Demonstration Fast Reactor, Guangdong Taipingling Nuclear Power and Guangdong Lufeng Nuclear Power to secure high-quality construction of the projects. Based on Zhangping Cement's excellent results in R&D and market development of nuclear power cement, relevant units and staff from each subsidiary regions of CR Cement were arranged to visit Zhangping Cement for exchange and study in order to be effectively equipped with the technology of production of nuclear power cement.

Through R&D and sales of nuclear power cement, Zhangping Cement actively participated in the development of national nuclear power business, which not only meets the practical needs of markets, but also effectively improves the market competitiveness of Runfeng Cement products and enhances competitive edge of differentiated products. They have expanded the sales radius and enhanced the quality of operation of the company.

For a long time, due to the different design standards adopted for the major models of nuclear power plants under construction and the lack of corresponding standards for nuclear power cement, nuclear power plants could only procure 42.5 and 52.5 Portland cement or ordinary Portland cement and proposed additional differentiated requirements for special technical indicators at the same time. Production of nuclear power cement was in lack of standards and guidance for testing methods, which made production extremely difficult.

On 1 February 2016, the first standard of cement used for nuclear power engineering construction dominantly formulated by our country, GB/T 31545-2015 "Portland Cement for Nuclear Power Engineering", was formally implemented, which had played an important role in standardizing production and quality control of Portland cement for nuclear power engineering in China, promoting the transformation and upgrade of the cement industry, improving the quality of cement and concrete used for nuclear power engineering and securing the long-term safe operation of nuclear power plants.

## Focus on Product Quality

### Quality Management

CR Cement has established the "Quality Management Series" in the "Management Manual" of the Company, with clear and stringent requirements on managing every detail of production process to offer guarantee on product quality assurance. In 2019, the Company established a quality management system throughout the whole production process covering raw materials, process control, product delivery and after-sales service, which organized production with strict reference to various standards and supervised and tested the product production process on a 24-hour basis.

In addition, the Company relies on a comprehensive and effective quality management system to incorporate key quality indicators of production process and products into the scope of performance appraisal of the operating regions and production plants as a continuous drive for better quality across all units through performance management. The Company continuously enhances its management standards in terms of quality and workmanship technology through the implementation of various lean improvement projects. The Company maintained persistent cooperation with the National Quality Supervision and Testing Center for Cement, and amended and improved the "Standards of Testing Methods" of the Company to drive for continuous improvement on standards of quality testing. We continue to take action on quality upgrade, promote the progress of quality improvement, and implement solid and fine quality improvement.

### Product Recall

CR Cement has set up standards for managing quality incidents, based on which identify and diagnose the incidents, establish solutions to handle substandard products, compensation standards, recall mechanism and process flow. Once discovered and confirmed that substandard products have left our factories or there are serious quality issues in the process of using the products, we would immediately inform the relevant customers to stop using or isolate that batch of products based on the standards. At the same time, we would organize recall on that batch of products if unused, confirm and compensate damages to customers. We will also organize investigation and analysis on the quality incidents, formulate rectification measures and account for responsibilities, and verify the rectification results. In 2019, no products sold or shipped by the Company were subject to recalls for safety and health reasons.

### Training on Quality

CR Cement has implemented a comprehensive internal quality management mechanism. Relevant employees' awareness and business skills on product quality are continuously enhanced through regular job training and skill training. In 2019, the Company has made remarkable achievements in promotion and education of product quality.



China Resources Cement Holdings Limited

1  
In the China Skills Competition – Cement Chemical Analyst Skills Competition, a total of 15 participants received awards, among which, 1 participant was awarded the National Technical Master Hand and 1 participant was awarded the designation of Excellent Arbitrator (only 1 participant among all cement enterprises won this award).

2  
Three employees of our Guangxi Region were awarded the second class award in the 6th "Concrete World" Cup National Competition of Concrete Professional Skills hosted by the China Concrete & Cement-based Products Association and the National Committee of China Metallurgical and Building Materials Union and co-organized by the Beijing Building Materials Academy of Sciences Research.



◀ The quality innovation QC group of Pingnan Cement was named as 2019 Guangxi Excellent Quality Management Group. Its quality control project "R&D of specific cement for the Hong Kong-Zhuhai-Macao Bridge" won the Third Class Award in the Second Achievements Presentation Competition organized by the QC Circle of State-owned Enterprises, the certificate of "Technical Achievement of level QIC-III" in the Fourth National Quality Innovation Competition, and the Second Class Award in the 39th Quality Management Forum Exchange of Six Provinces (Regions) in Southern China.

## Promote R&D and Innovation

### Innovation Management

CR Cement effectively secured implementation of corporate transformation and innovation from two perspectives of systems and organizations. In terms of systems, the "Construction Plan for Innovation Management System" and "Management Measures on R&D Projects" were issued to further regulate the process management of innovation projects, promote the conversion of innovation opportunities into innovative results as well as their application and achievement of commercialization. In terms of organizations, the Technology Research and Development Centre was established, and innovative organizations such as China Resources Environmental Protection Engineering, laboratories of the Research and Development Centre, the Technical Committee and Runfeng New Materials were set up to lay the foundation for innovative development.



◀ Following China Resources Cement Technology Research and Development Limited, China Resources Cement Technology Research and Development (Guangxi) Limited has also passed the Recognition of National High-tech Enterprise.

### R&D of Product Technology

CR Cement focuses on market demand and industry prospects and continues to pay attention to R&D of product technology. In 2019, the Company focused on rolling out R&D of products and technological advancements such as research on engineering technology of treatment and management of water inrush at the limestone mine pits in Pingnan, development of key production technologies for cement-based engineered stone countertops, development of early-strength crystal nucleating agent products for prefabricated construction components, R&D of coal catalytic technology, research on processing of de-sulphur ash, and research and application of low-grade limestone high-calcined belite cement test and industrialization project. Among which, the research and innovative development project on engineering technology of treatment and management of water inrush at the limestone mine pits of Pingnan Cement won the "Second Class Award of Science and Technology from the China Society for Rock Mechanics and Engineering".

## New Product Launch

CR Cement thoroughly implements the requirements of national policies by actively promoting innovation, transformation and upgrade of products. In 2019, the Company proactively initiated seminars and market research on abolition of PC32.5R grade cement to fully understand customers' needs and formulate tackling solutions. All PC32.5R grade cement had been abolished and replacement products including masonry cement M32.5 and PC42.5 grade cement had been successfully launched by late September. The new masonry cement M32.5 product has the features of quality stability, colour stability, high later-strength, good construction performance and high fracture resistance as compared with PC32.5R grade cement. With high strength and good value for money, PC42.5 grade cement is suitable for general construction and domestic self-built houses, which can meet different needs of users.



▲ Fengkai Cement held the "Runfeng Cement PC42.5 and M32.5 New Product Launch Promotion Conference"

## Digital Transformation

CR Cement continued to lay a solid foundation for informatization and promoted digital transformation. In 2019, the Company deepened its development in intelligent manufacturing, smart inventory, smart marketing and smart logistics, and gradually stepped forward towards intelligentization for the construction of a "digital-driven business" transformative mode.

• Pilot intelligent manufacturing had been rolled out at Tianyang Cement and Nanning Cement. Among which, Tianyang Cement had completed trial operation of the systems of manufacturing operations management (MOM) and application lifecycle management of equipment (ALM). Nanning Cement had completed trial operation of equipment management system and quality management system.

• Pilot project for digital transformation of sales and marketing model was launched in Shenzhen West Region through innovations of convenient transaction experience, distribution logistics system, supply chain financial services and other business models to precisely grasp customers' needs, reduce intermediate steps, consolidate cutting-edge resources, thereby promote industry upgrade for achieving consolidation of the entire industry chain.

Intelligent manufacturing

Smart inventory

Smart marketing

Smart logistics

We had explored and created supply chain for comprehensive sharing, effective collaboration and targeted procurement of materials. Establishment of sharing platform for auxiliary materials and spare parts was promoted, and pilot trial operation was launched in Fujian Region on 1 January 2020, which is conducive to achieving inventory sharing.

The application of the "Smart Card" delivery system was deepened to achieve wholly unmanned delivery process and improve average employee performance. Shipping efficiency had increased by 30% at production plants where the system had been rolled out. The project won the National Software Copyright Certificate and China Resources Group's "Best Practical Project" award.

## All-Staff Innovation

CR Cement advocates for an innovation culture and continues to create an atmosphere for innovation. Promotion plans for innovation projects are formulated and all-staff innovation is promoted in scientific ways. In 2019, the Company formulated and implemented promotion plans for innovation projects. We connected and reached consensus on intention to cooperate with companies in emerging fields such as artificial intelligence, Internet of Things and drones to promote acceleration in the advancement of intelligentization in traditional industries. We organized the first-class training of innovative TRIZ (Theory of Inventive Problem Solving), certified 27 TRIZ first-class talents and solved major technical problems, among which, patents have already been produced on 2 subjects. We newly developed 13 innovative talent training courses on prefabricated construction and intelligent manufacturing to coordinate the development of new businesses.



◀ In November 2019, the final of CR Cement's fourth "Runfeng Cup" innovation competition was successfully held at the Guangzhou China Resources Cement College. Approximately 500 people, including representatives of China Resources Group's innovation committee, CR Cement's management, expert referees, 18 project teams which participated in the competition, management and colleagues from various video conference spots participated in the event. A total of 189 innovation projects were received in the heat contests of this innovation competition, and finally 18 projects were selected to enter the finals, including 7 product technology innovation projects, 8 management innovation projects and 3 business model innovation projects, mainly involving safety compliance, cost reduction and efficiency improvement, data analysis, customer experience, intelligent manufacturing, new products and new technologies.



◀ In February 2019, CR Cement held the 2019 Innovation Conference in Guangzhou. 7 innovation projects recommended by "Run Acceleration" were invited for roadshow presentations and connections. Sharing and exchange on the achievements and experiences of the 7 internal outstanding innovation projects was conducted. The picture is a group photo of the Innovative Industry Connection Conference of the Innovation Conference.



◀ In January 2019, CR Cement's Strategic Development Department organized counselling on the training subject of 2019 CR Cement innovative TRIZ (Theory of Inventive Problem Solving) at Pingnan Cement of Guangxi Region.

## Optimize Customer Experiences

### Customer Relationship Management

CR Cement established a robust customer service system. We organized key user training activities for promoting pre-emptive customer services and further guiding domestic customers on standard use of cement products. Professional customer service personnel were deployed at each operating region and production plant to provide customers with pre-sale, sale and after-sales services. Customer service personnel regularly paid reverse visits to customers for exchanging product technology with customers, explaining product-related knowledge and listening to customers' opinions and suggestions. Customer service hotlines were set up at operating regions to answer customers' enquiries in a timely manner for enhancing customer satisfaction levels.

With strict reference to the requirements of national laws and regulations, CR Cement offered detailed introduction on product performance and potential problems in the product manual to ensure that consumers had a full understanding on product knowledge. Relevant instructions and tips were printed on the external packaging bags of products to minimize potential problems caused by improper product use. We also organized customer training meetings, conducted events for promotion and illustration of products to convey facts and practices regarding product performance and instructions for use, answer customers' common questions on cement application and provide guidance on specific usage problems such as storage of raw materials, concrete mix prescription ratio and construction habits.

### Protect the Rights and Interests of Customers

#### • Customer Data Protection

The Company treats customer data as core trade secrets. Customer data is under strict confidentiality pursuant to the relevant management requirements including "Regulations on Managing Confidentiality Work of China Resources Cement Holdings Limited" and "Management Measures on Trade Secrets of China Resources Cement Holdings Limited". Independent files are created for all customer data with designated staff in charge of data collection, filing and update. We also set corresponding access rights to make inquiry on and export the relevant data in order to ensure security of customer data. In 2019, the Company persistently strengthened protection of data in systems and management of access rights to systems, initiated risk assessment on information cyber-security, identified weaknesses in the information systems and reinforced protection in a timely manner. A mechanism for off-site disaster back-up synchronization of core application data was established to comprehensively protect the data of our business and customers. During the year, the Company did not have any incident of breach of cyber-security or customers' privacy rights.

#### • Combat Counterfeit and Shoddy Products

CR Cement pays keen attention to the protection of intellectual property rights, continues to promote trademark registration, right confirmation and copyright registration in accordance with the law, vigorously defends our rights and cracks down on counterfeit goods. The Company established a traceable supervision system for product quality, integrated the weighbridge and packaging systems into the ERP system and ensured that each issued bag of cement was printed with a unique identification code, which provided technical support for follow-up on product quality supervision and combatting counterfeit and shoddy cement. We continuously collected information on the use of "Runfeng" trademarks in the cement industry and sales regions, which provided support for follow-up on protection of trademark rights. In September 2019, the Company reported and investigated a total of 4,600 counterfeit "Runfeng" cement woven bags in Baoan District of Shenzhen Municipality.

#### • Follow-up on Customer Complaints

CR Cement collects and compiles information from customer reverse visits, details of customers' complaint handling, sampling of the Company's and competitors' products on a monthly basis to manage customers' complaints, focus on tracking fluctuations of product performance indicators, quality issues on packaging bags, customers' aspirations and suggestions for product production and shipping as well as to formulate rectification plans based on feedback comments and continue to follow up on the progress of rectification to promote improvement on products and services.



▲ Specialized staff were designated to handle customers' complaints within 24 hours, with a handling rate of 100%.



In April 2019, the Hainan Region received customer feedback on the problem of "low liquidity" of cement when a customer used PC32.5R cement produced by Jinjiang Cement for construction slurry. After on-site inspection and communications with the customer to understand the specific operation process, it was found that the problem was caused by improper operation. In response to this situation, in order to strengthen communications and sharing with customers and provide guidance to customers on standard instruction of use during construction, the Operation Department, Marketing Department and Jinjiang Grinding Station of CR Cement's Hainan Region jointly organized relevant cement customers and relevant personnel of regional departments and production plants to launch an experiment of cement paste and slurry at Jinjiang Grinding Station in late May, with on-site practical operation and training on relevant operation of cement slurry to solve customers' problems.

### Offer Satisfactory Services

#### • Customer Satisfaction Surveys

Upon integrating the situation of practical work, each operating region and production plant of CR Cement extensively collected customers' opinions and suggestions through questionnaires of customer satisfaction surveys and visits to customers with solicitude in order to gain a better insight on customers' satisfaction level on products and services of the Company and respond to customers' feedback in a timely, objective and effective manner. In 2019, customer satisfaction surveys were organized in Guangdong, Guangxi and Fujian Regions.

#### Guangdong Region

The survey questionnaire was designed on the aspects of "sales services, product quality, product supply and logistics, brand evaluation, and customers' suggestions". Through online questionnaires, the surveys targeted direct sales and distributorship customers separately to understand customers' overall impression and aspirations on "Runfeng" brand. The final satisfaction score was 92.7%.

#### Guangxi Region

The research questionnaire was designed on the six dimensions of "product quality, application/use performance, quality of packaging bags, loading services, sales services, and other services". The survey on satisfaction level targeted bulk and bagged customers separately to understand the aspirations of different types of customers. The final satisfaction score was 88.3%.

#### Fujian Region

The research questionnaire was designed with 25 questions regarding the entire closed-loop process of transaction to understand customers' psychological expectations on the Company's products. The final satisfaction score was 91.4%.



▲ "Runfeng Brand Anniversary" held at Longyan Cement, Fujian



▲ Runxin cement products craftsmanship competition in Yunfu region

Each step of CR Cement's growth is inseparable from the support of our business partners. Adhering to the vision of "to become a respectable world-class cement enterprise", CR Cement attaches great importance to communications and cooperation with business partners such as the government, suppliers, customers and academic research institutions. We consolidate cutting-edge resources from various business partners, build strategic sharing platform, explore opportunities and exert influence to foster the healthy and sustainable operation of the industry chain and drive for the development and advancement of the industry.

# Hand-in-Hand Together

## Build a New Chapter in the Industry



## Deepen academia-enterprise cooperation

### Innovatively treat and manage water inrush at mine pits



▲ Completion ceremony of the second-phase water treatment project at the mines of China Resources Cement (Pingnan) Limited

China Resources Cement (Pingnan) Limited (abbreviated as "Pingnan Cement") is located in Danzhu Town, Pingnan County, Guangxi with strong karst development and abundant water supply, resulting in complex hydrogeological conditions. Following the increasingly deep mining in recent years, sinkholes and pit water inrush in the mining area have been continuously increasing, which has substantially increased the cost of water discharge, threatened the normal production of the mine and created certain latent safety hazards to the ecological environment in the vicinity.

In order to effectively treat and manage the problem of water inrush at mine pits, liberate the subterranean resources of the mine and secure normal and safe mining, in December 2015, Pingnan Cement and Shandong University launched



joint scientific research, set up a subject group which stationed at the water inrush sites to carry out special treatment and management. Continued extension of downward mining at the mining area was achieved through controlling the quantity of inrush water and reducing the impact of water discharge at mining areas on the environment in the vicinity. After conducting numerous researches and discussions based on the existing hydrogeological data of the mine and integrating the results of supplementary exploratory checks in special areas, the two parties innovatively proposed the process of "device for current control and deceleration + joint grouting into key hole" to block water inrush of karst pipes. Water inrush of 71,200 m<sup>3</sup>/day had been successfully blocked at No. 01 water inrush point to ensure normal production of the mine and achieve secured supply to customers.

In March 2018, based on the successful cooperation of the first-phase water treatment project, Pingnan Cement and Shandong University continued to jointly carry out the second-phase treatment and management of inrush water in the Hejing mining area. By combining the successful experience of treatment and management in the first phase with the actual situation of the second-phase project, the two

parties discussed and proposed the comprehensive water treatment concept of "grout pad for current control and deceleration + precision exploration and survey of key channels + discontinuous curtain closure + plugging with CIS new controllable material" and the dynamic construction method of "simultaneous reconnaissance, design and construction". On 26 September 2018, block-off of No.02 and No.03 water inrush points had been successfully achieved, and on 30 November of the same year, 95% reduction in water inrush had been achieved at No.04 water inrush point. While ensuring mining volume, this has substantially decreased the probability of geological disasters such as karst cave collapse that may be caused by strong water inrush and reduced the risk of mine construction, which is conducive to building a harmonious village-enterprise relationship and has significant economic and social benefits. The project won the "Second Class Award of Science and Technology Award from the China Society for Rock Mechanics and Engineering".

During the course of cooperation, Pingnan Cement also actively provided a quality platform of practice resources for the students of Shandong University by letting students walk into the sites from classrooms, joining the frontline of the project, making full use of classroom knowledge, and getting hands on and minds on to solve practical problems. In August 2019, the construction of practice plant was successfully completed by excellent students. The plant was adjacent to the Shandong University-CR Cement's Project Department for Treatment and Management of Mine Water Inrush. It covered an area of approximately 480 m<sup>2</sup>. Conventional test instruments such as model test systems for visual multi-pipe karst dynamic water plugging, constant stress and pressure testing machines and mortar impermeability instrument were purchased to meet the basic needs for scientific research by students during the process of academia-enterprise cooperation.



▲ Factory area of China Resources Cement (Pingnan) Limited

In 2019, the practice plant trained 6 students in total, including 2 doctoral students and 4 master students. Based on Pingnan Cement's project for treatment and management of limestone water inrush in Hejing Mine, the students who participated in the training used the original knowledge from classrooms as the basis of practical action, and actively engaged in the frontline construction, treatment and management work of the project through on-site reconnaissance, inspection, testing and experimental analysis.

In June 2019, Pingnan Cement Excellent Student Practice Plant was accredited as the "Shandong University Excellent Student Practice Plant".

Relying on a good academia-enterprise cooperation platform and through close cooperation over the past few years, Pingnan Cement and Shandong University have conducted research and practice on secondary geological disasters such as sudden water inrush in karst areas as well as consequential sinkhole collapse and structural inclination. They have built a five-in-one treatment and management system of "theory, technology, materials, process, and experience", as well as the innovative concept of grouting technique and R&D of equipment, which has laid a good foundation for inrush water plugging at coastal karst mines and the treatment and management of karst cave collapse later on. This has also provided theoretical technical support and experience accumulation for the treatment and management of water inrush at similar mines in karst areas of our country.



▲ Factory area of China Resources Cement (Pingnan) Limited

## Deepen Strategic Collaboration

CR Cement actively cooperates with local governments and regional leading enterprises to achieve strong alliances for mutual benefit. The specifics of cooperation involve the business development of cement, concrete, aggregates, new materials, prefabricated construction and co-processing, which are conducive to promoting the Company's development in extension of industrial chain and helpful to the Company's leap towards a new stage through transformation and innovation.



### Strategic cooperation with Yunnan Construction and Investment Holding Group Co., Ltd.

Yunnan Construction and Investment Holding Group Co., Ltd. is an important state-owned enterprise in Yunnan Province and its business covers all construction operations in the field of construction. In June 2019, CR Cement entered into a strategic cooperation agreement with Yunnan Construction and Investment Holding Group Co., Ltd., whereby both parties shall launch comprehensive cooperation in terms of cement, concrete and aggregate businesses. In October 2019, CR Cement subscribed for 40,164,000 H shares, representing approximately 9.0% of issued share capital, of YCIH Green High-Performance Concrete Company Limited, a subsidiary of Yunnan Construction and Investment Holding Group Co., Ltd., to become one of the strategic shareholders. This marks a substantive and critical step in the strategic cooperation between both parties.

The cooperation between CR Cement and Yunnan Construction and Investment Holding Group Co., Ltd., and its subsidiary YCIH Green High-Performance Concrete Company Limited will be conducive for CR Cement to enhancing its competitiveness in the Yunnan market and achieving the development in extension of industry chain.



Longyan Caoxi Cement and XCMG Group cooperated in the mining engineering machinery "light asset" project to ensure orderly and safe mining and a stable mine supply.



Fujian Region and Longyan Overseas Chinese Occupation Technical Secondary School launched industry-academia integration, school-enterprise collaborative education and school-enterprise cooperation project to jointly cultivate future talents.

## Drive Partners' Growth

### Supplier Management

CR Cement is dedicated to creating an effective procurement management system. Three-tiered management and control of procurement covering headquarters, operating regions and production plants is fully reinforced through measures such as amendments to procurement management policies, training of all procurement staff, spot checks on compliance by internal audit and rectifications, optimization of business workflow of informationized procurement management system, writing and publication of "Monthly Report on Procurement Management", and delegation of management functions. We established full-lifecycle supplier management system that covered admission, cooperation, evaluation and exit. Suppliers are managed in real time by the supplier appraisal system, which requires us to procure from outstanding suppliers on a priority basis provided that their prices are consistent with our target costs, provide timely feedback on the weaknesses of suppliers which require rectification and offer of relevant assistance and examine on their rectification results upon the deadline at the same time, and remove substandard suppliers from our eligible supplier database in a timely manner. We thoroughly implement the management requirements of "strict management, strong execution and high efficiency" by requiring our suppliers or business partners for compliance with laws and regulations, environmental protection, integrity operations and quality assurance. In 2019, the Company amended and perfected the "Supplier Management Methods" to implement full-lifecycle management of suppliers. The proportion of purchase amount by tender increased to 49% and the collective procurement rate reached 97%.



## Responsible Procurement

### • Integrity and Compliant Procurement

CR Cement strictly abides by compliant procurement. Through measures such as holding alert education meetings and sharing typical cases of violations and disciplinary actions, we require procurement staff to learn from these lessons and uphold integrity and self-discipline. Multiple channels for public procurement complaints and whistleblowing channels are available to strengthen integrity supervision. All procurement staff are required to sign the "Sunshine Declaration" and implement "Things to Note when Procurement Staff are in Contact with Suppliers" of the Company for arousing integrity awareness of all the procurement staff. At the same time, all suppliers are required to sign and abide by the "Sunshine Declaration" which has been incorporated as annex in all our procurement contracts. Suppliers who have any dishonest behaviours will be added to our blacklisted supplier database.



In 2019, the Company strengthened system implementation by organizing more than 60 meetings to promote the procurement management system with a total of 1,879 participants in attendance and organizing all the 308 staff in the procurement system to take an examination to improve compliance awareness and management level.

### • Open and Fair Competition

CR Cement strives to create a fair and impartial competitive environment and promote scrupulous competition of suppliers by strictly checking connected relationships of suppliers, eliminating behaviours such as bid rigging and collusive bidding. Each procurement needs of the Company are openly directed to all suppliers through the self-developed SRM system (supplier relationship management system) and the scope of openness is expanded through channels such as external websites and WeChat. In 2019, the Company further optimized the functions of the SRM system such as registration and evaluation of suppliers, fostered the achievement of better information exchanges with suppliers and created an "open, fair, impartial, honest and credible" commercial environment.

### • Green and Safe Procurement

CR Cement integrates the requirements of green, safety and development into the criteria for selection of suppliers, and requires suppliers to sign the "Safety and Environmental Protection Agreement". We develop and use new materials and new technology for reduced energy consumption and environmental protection. We vigorously advocate for green procurement by promoting the use of local industrial waste residues instead of resource-type raw materials. At the same time of expanding localized procurement, we have reduced industrial pollution, driven the business development of local transportation and created a new employment environment for neighbouring residents to achieve mutual development.

### Growth of Suppliers

CR Cement had established a transparent, dynamic and traceable supply chain to continuously stimulate the growth of suppliers. The Company held training activities for suppliers from time to time to deliver the concepts of social responsibilities such as environmental protection, safety and health to suppliers for arousing the suppliers' awareness of social responsibilities.



▲ In December 2019, CR Cement organized and launched technical backbone training of lubricant localization. The frontline technical backbone of production exchanged and discussed with relevant suppliers on the issues and solutions of lubricant localization.

### Lead Industry Development

CR Cement actively participated in technology seminars and formulation of standards in the industry, and fully utilized the advantages in industry collaboration and resources of business partners to promote the green, healthy and stable development of the industry.



#### Strengthen exchange within the industry

We maintain close communications with China Building Materials Federation and China Cement Association, and participate in various industry technology exchange meetings. We focus on exchanging technology and management experience with peer enterprises such as Conch Cement, CNBM, BBMG-Jidong and Taiwan Cement to enhance mutual trust and consensus in the industry.



#### Strengthen technical cooperation

We actively explore cutting-edge technology with the Research Institute of Tsinghua University in Shenzhen, Flender from Germany, XCMG Group to strengthen resource docking and technical cooperation, promote the application and practice of new technologies, new equipment and new processes in the industry, and promote transformation, upgrade and development of the industry.



#### Participate in subject research

We actively participate in industry subject research and contribute wisdom and strength to industry transformation and development. In 2019, the Company completed the construction of the two national "13th Five-Year" subject projects of assurance of high corrosion-resistant marine cement prescription and a 1,000-metre coil pipe test platform.



#### 1,000-metre Coil Pipe Test Platform Project



Application of high-rise concrete pump construction has been very extensive domestically and internationally, but the pumpability evaluation of concrete mixtures mostly remains at an empirical level and only indirect characterization of its workability can be applied. The lack of systematic research on concrete rheological performance and pumpability evaluation has hindered the establishment of a scientific evaluation method for concrete pumpability performance. In 2019, China Resources Cement Technology Research and Development [Guangxi] Limited completed the construction and pump test of a horizontal concrete coil pipe test platform with a total length of 1,050 metres. A variety of aggregates and materials were used in the test to prepare concrete with different strength levels (C30-C100) and different working performance. The internal pressure at different parts of the pipe was measured under different pumping speeds and different conditions of pipe diameters. At the same time, different forms of rheometers are used to simultaneously measure the rheological performance of concrete mixtures. The test project was relatively comprehensive and thoughtful, and had obtained a lot of valuable first-hand information.



▲ Construction site of "Coil Pipe Test Platform"

Targetting the technical difficulties of high-rise and ultra-high-rise concrete pumping, the project abandoned the inexact methods which had long been based on forms such as experience and trial. The efficiency of concrete pump construction had been significantly improved, reference data was provided for amending the existing relevant national standards. The business backbone of concrete preparation and pump construction had also been cultivated for CR Cement.



▲ Site of coil pipe test in December 2019

It is the first time in the world to carry out such a systematic and comprehensive full-scale simulation test and research on concrete rheology and pump performance. The test results will lay the foundation for the establishment of our country's own concrete pump performance evaluation system and provide reference data for amending the existing relevant national standards.

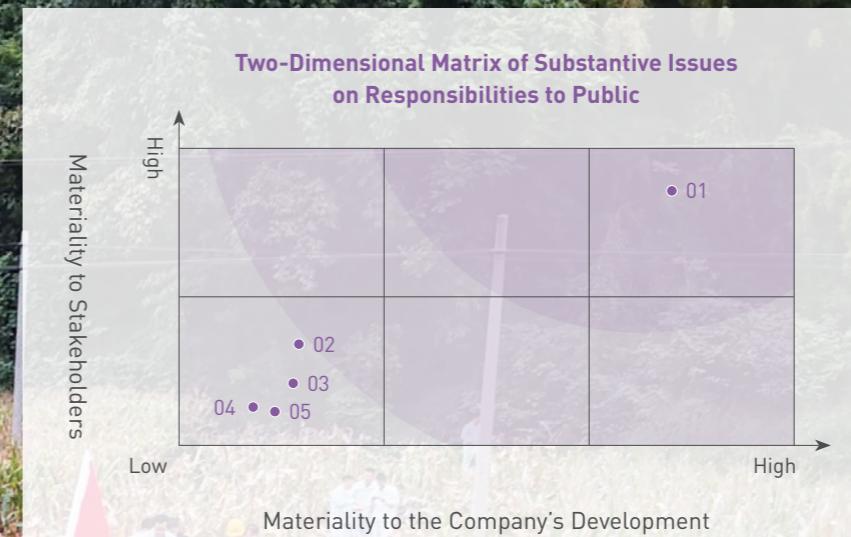
—Yan Peiyu, Director of the Institute of Building Materials, School of Civil Engineering, and Professor of the School of Civil Engineering, Tsinghua University



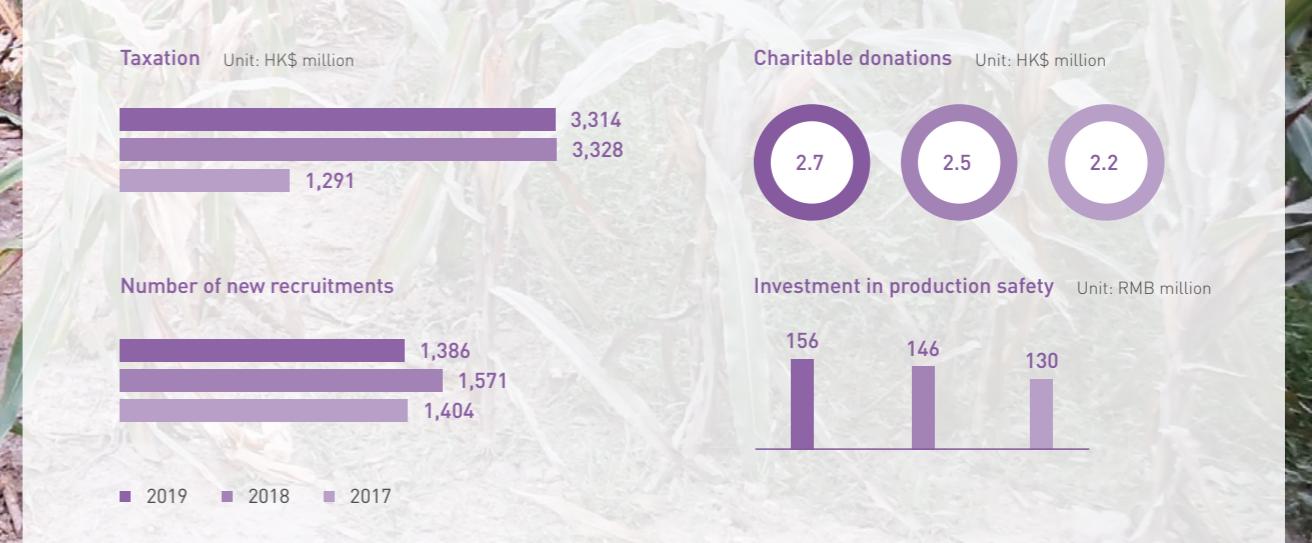
# Affection for Society Build a Harmonious Future'

As a responsible and committed enterprise, CR Cement insists on integrating corporate development with fulfilment of social responsibilities, actively implements production safety, and combines the Company's own business characteristics and advantages in making strong targeted efforts on treatment and management of rural environment, poverty alleviation and assistance to the underprivileged, care for future talents and care for special groups to build a more harmonious and beautiful society with practical actions.

Scene of an activity to assist farmers with love and care of China Resources Cement (Tianyang) Limited



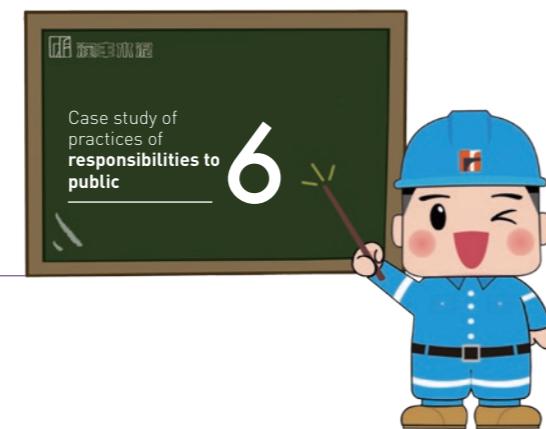
- 01 Implement production safety
- 02 Strengthen communications with the community and participate in community development
- 03 Engage in community charity
- 04 Foster and drive employment
- 05 Participate in poverty alleviation and assist the underprivileged



## Couraged and committed act Help in the battle of poverty alleviation

China Resources Cement (Heqing) Limited (abbreviated as Heqing Cement) is located in Heqing County in the northwest of Yunnan Province and under the jurisdiction of Dali Prefecture. It is one of the 592 counties in the country and 73 counties in the province which needed key support for poverty alleviation and development. The mission of poverty alleviation was onerous. In September 2015, the local government issued the "Opinions on Winning the Battle of Poverty Alleviation and Development with the Efforts of the Entire County". Heqing Cement actively responded by donating 500 tons of cement to rural villages such as Jiangdong Village Committee of Longkaikou Town for rural roads, collective poverty alleviation economic projects and construction of public facilities in villages and towns.

In June 2017, in order to improve the production and living conditions of the villagers in the vicinity of the enterprise and promote infrastructure construction, Heqing Cement donated 80 tons of bagged cement to Shuanglong Village Committee and Dadeng Village Committee of Xintun Town to be used for road hardening of passageways in mechanized farms from Donghejian to Damiao at the fourth village cluster of Shuanglong Village and road hardening of pavements at Dadeng Village, among which, 1,056 people from 235 households were benefited from the project for hardening of passageways in mechanized farms in Shuanglong Village.



From 2017 to 2018, according to Heqing County's "13th Five-Year Plan" for relocating the poor, Heqing Cement opened up a dedicated delivery path to provide "Caring Cement" at cost price to the relocation points of the entire county and the underprivileged farmers who had relocated. Also, a total of 8,556 tons of cement was delivered according to the need to expand the scope of supply to the new rural construction sites for poor households to build houses, poor households with registered cards to build "safe and stable housing projects" and the village collective economic infrastructure construction, which had strongly promoted the smooth implementation of construction projects for poverty alleviation.

In October 2018, on the occasion of the forthcoming National Poverty Alleviation Day, Heqing Cement donated 400 tons of cement to Heqing County for construction for poverty alleviation, which was coordinated and arranged by the county's Department of Industry and Information Technology to be used for construction projects for poverty alleviation.

In October 2019, in order to support Heqing County to fulfil the goal of "the last kilometre" of mass prosperity road, Heqing Cement donated 200 tons of cement to Heqing County.

Since 2015, Heqing Cement has actively participated in local work for poverty alleviation. By the end of 2019, the company had donated a total of approximately RMB1.03 million in cash and in kind. The company has also repeatedly participated in labour recruitment fairs

for underprivileged households of the county with third-party labour employment units, and resolved the employment of 18 laborers of underprivileged households with registered cards in the vicinity. In 2019, Heqing Cement won the title of "Star Enterprise for Poverty Alleviation" in Heqing County.

Heqing Cement's action in helping local poverty alleviation is only one of the many stories in CR Cement's actions for poverty alleviation. For a long time, CR Cement has actively responded to the calls from the country and China Resources Group for tackling poverty alleviation and targeted poverty alleviation through donations in cash and in kind to underprivileged regions and underprivileged families, active employment of residents in the vicinity of the enterprises, support on education development in underprivileged regions and participation in community construction in order to help the underprivileged regions and people solve practical difficulties.

As of the end of 2019, CR Cement had invested RMB2.481 billion in the incorporation of 7 enterprises in national-level underprivileged counties including Jingxi of Guangxi, Wuzishan of Hainan, Fangshan of Shanxi, Midu and Heqing of Yunnan which had employed 1,018 employees. From 2015 to February 2020, a total of 246 local underprivileged households with registered cards were assisted to achieve employment. The 7 enterprises paid local taxes of RMB828 million in total, effectively driving local economic development.

From 2015 to March 2020, CR Cement made external donations of approximately RMB9 million in total to help neighbours and villagers repair bridges, build roads and develop education business.

From 2015 to March 2020, the cumulative investments through donations in cash, in kind and other investment behaviours amounted to RMB15,570,300 to support poverty alleviation projects, including 9 projects of over RMB 300,000.

From the beginning of 2008 to the end of 2019, CR Cement made donations in cash and in kind valued at RMB3,953,100 in total to China Resources Hope Towns in Baise, Xibaipo, Gutian, Jinzhai, Jinggangshan and Haiyuan, in support of Jinzhai China Resources Hope Primary School's "Future



▲ Scene of donation of caring cement by China Resources Cement (Heqing) Limited for poverty alleviation

Engineers' Laboratory" project and the pavement construction project for Public Square of China Resources Hope Town in Jinggangshan. Employees were deployed to support the construction of China Resources Hope Town in Baise and Gutian.

From 2018 to February 2020, in response to China Resources Group's call for continuous implementation of talent poverty alleviation projects, CR Cement organized 39 senior and middle-level managerial staff to provide "one-on-one" support and assistance to 39 underprivileged university students in Haiyuan County, with cumulative subsidization funding of RMB93,000, to help Haiyuan County cultivate excellent talents through the long-term assistance mechanism for poverty alleviation through education.

With the active participation and joint efforts from all sectors of the society, Heqing County has combined tackling poverty alleviation with promoting the development of dominant industries and effective improvement of people's livelihood. In the four years from 2014 to 2017, the underprivileged population had cumulatively decreased by 7,291 households and 28,350 people, and the occurrence rate of poverty dropped from 13.32% to 1.23%. On 29 September 2018, the People's Government of Yunnan Province formally approved 15 counties (cities) to withdraw from the series of underprivileged counties. Heqing County in Dali was on the list, which had knocked on the opening "Blissful Door" of poverty alleviation and prosperity for 280,500 fellow citizens from 25 ethnic groups including Bai, Han, Yi and Lisu!



In the four years from 2014 to 2017, the underprivileged population had cumulatively decreased by 7,291 households and 28,350 people.

## Implement Production Safety

### EHS Management

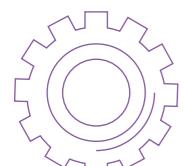
- Safety Culture System



#### Vision of Health and Safety

##### Safe China Resources, Blissful Home

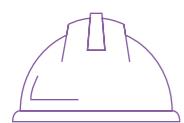
Build a value-creation type of safety management system with distinctive characteristics of China Resources to create a safe working environment in China Resources; care for employees' safety and health, making CR Cement a safe and blissful home.



#### Philosophy of Health and Safety

##### People-oriented and safety development; all accidents are preventable.

Never pursue corporate development and economic benefits to the detriment of employees' health and lives; never compromise issues of production safety management for economic benefits.



#### Policy of Health and Safety

##### Safety first, with a focus on prevention and comprehensive treatment; compliance with laws and regulations, scientific management and continuous improvement.

Our goal of health and safety management is zero incident.

### • EHS Management Policies

CR Cement is in strict compliance with relevant EHS management policies and continuously improves management of staff occupational health and safety. In 2019, the Company promulgated and implemented policies including the "Safety Management Measures on the Storage Yards of China Resources Cement Holdings Limited", "Management Measures on EHS Duty of China Resources Cement Holdings Limited", and "Policy for Accountability of Safety Incidents of China Resources Cement Holdings Limited (2019 version)". We continued to improve the EHS accountability policies. All relevant departments at headquarters, all major operating regions and all production plants were required to enter into the "Letter of EHS Undertaking", and relevant EHS responsibilities had been incorporated in the annual performance appraisal. We actively advocated the full application and practice of EHS management elements and encouraged systemization of corporate EHS management.

In addition, the Company abides by the principle of "whoever uses a counterparty has to manage them and is responsible for them" in counterparty safety management. Contractors of construction projects, service providers for maintenance and repairs of equipment, transportation providers, headhunters, suppliers, waste handlers, tenants, technical service providers are managed according to classification and levels. Counterparties working at higher risk are subject to advanced notice, filing of cases, regular monitoring and assessment, as well as the implementation of blacklisting mechanism.

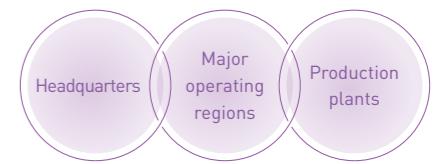
> **Prior to signing a contract:** Review and verify the safety qualifications of each counterparty, incorporate safety requirements into the contract, and require the counterparty to enter into a safety agreement at the same time of signing the contract.

> **Before a counterparty may enter our factories:** Confirm the protective gears, safety method statement and contingency rescue plans. Upon entering the site, all personnel are required to attend pre-entrance safety training and site safety training to secure the safety and health of the counterparties.

### • EHS Management Structure

The principle of three-tiered management and control has been implemented at each level of CR Cement's EHS organizational system, which comprises the EHS organizational institutions of headquarters, major operating regions and production plants. EHS organizational institutions at each level includes the EHS Committee, the EHS Supervision and Management Department and the EHS Supporting Department. The EHS Management Committee at headquarters is chaired by the Chief Executive Officer of the Company. The headquarters set up the EHS Department and appointed the Chief Safety and Environmental Officer. EHS departments (offices) are set up at our major operating regions and production plants respectively under the direct management of persons in charge of corresponding major operating regions and production plants. As of the end of 2019, the Company had a total of 274 specialized EHS management personnel, among which, 192 were specialized safety management personnel (including 59 registered safety engineers).

#### Principle of three-tiered management and control of EHS organizational system



## Operational Safety

### • Production Safety Standardization

CR Cement is committed to production safety standardization and raising the overall standards of safety management through continuous improvement on fundamental management and innovative management models. As of the end of 2019, 28 cement production plants of the Company (inclusive of grinding stations) have passed the on-site assessments as the First-Class Enterprise in National Production Safety Standardization and the limestone mines of 17 cement production plants have passed the assessments as the Second-Class Enterprise in Production Safety Standardization. Pilot construction of a First-Class Mine in Production Safety Standardization commenced at Tianyang Cement. The mines at Tianyang Cement had completed pre-assessment in August, which possessed the qualifications required for the assessment as the First-Class Mine in Production Safety Standardization.

### • Innovative Safety Technology

CR Cement constantly consolidates fundamental management and innovative management models, and prevents safety risks by means of management and technology in order to promote the safe and sustainable development of the Company.

> **Intelligentization of vehicles in storage yards:** Intelligent management of storage yards was actively promoted. Pilot projects of intelligent vehicles in storage yards were launched at Pingnan Cement, Nanning Cement and Luoding Cement.

> **Lockout tagout management:** An on-site exchange and observation meeting of lockout tagout demonstration project was held at Huizhou Cement. Lockout tagout management will be fully rolled out on the basis of concluding the experience from the pilot project.

> **Blasting of mixed explosives:** Blasting of mixed explosives was promoted. The mines of 13 cement production plants had been using on-site mixed explosives to initiate blasting. Among which, 10 mines had maintained a consistent utilization rate of mixed explosives at above 90%, which had substantially reduced safety risks during transportation and construction process and had strongly increased the intrinsic safety standards of mine blasting.



▲ Storage yard exchange conference held at Pingnan Cement



▲ Sharing meeting on lockout tagout of power generator room at Huizhou Cement

#### • Inspection of Latent Safety Hazard

CR Cement had established long-term effective mechanism for the inspection, treatment and management of latent hazards of production safety incidents. The works of multi-level inspections, supervision, treatment and management of latent safety hazards were continuously reinforced at headquarters, major operating regions and production plants to prevent and minimize incidents of personal injuries and secure the safety of our employees' lives and properties. In 2019, the Company successively conducted annual safety assessment inspections on 32 cement production plants and 54 concrete batching plants, annual large-scale safety inspections at 9 cement production plants and 1 concrete batching plant, special safety inspections at the mines of 14 cement production plants, on-site supervision on the repairs and maintenance as well as management of counterparties at 13 cement production plants. 17 concrete batching plants were inspected and assisted.

Meanwhile, the Company conducted safety audit. The on-site safety audit of 5 cement production plants and 2 concrete batching plants drilled deeply on the reasons for management issues and promoted better safety management. Throughout the year, 244 large-scale comprehensive inspections and 200 special inspections were done at major operating regions and production plants. We strictly implemented the mechanism for inspections led by persons in charge, among which, persons in charge of major operating regions and production plants conducted 231 safety inspections. In response to the plans for rectification of major latent hazards identified at the 2018 EHS Conference, follow-up is done on a monthly basis, on-site audit and verification are held, and completion progress of rectification is included in the annual performance contract.

## Safety Education

#### • Safety Training

CR Cement actively implemented safety training and combined online and offline training methods. Videos of safety emergency drills were uploaded on the online learning platform at the learning system of China Resources University to encourage our staff to self-study. In 2019, the aggregate duration of safety training for the Company's staff amounted to approximately 328,000 hours, whereas that for counterparties amounted to approximately 73,000 hours, with a total of 245,398 participants in attendance and full coverage was achieved. At the same time, an online examination platform had been created to effectively enhance safety leadership and the management standards of health and safety. A closed book examination on health and safety knowledge was organized for senior and middle-level managerial staff in December 2019, with 207 participants in attendance.



▲ In 2019, the aggregate duration of safety training for the Company's staff amounted to approximately **328,000** hours

The aggregate duration of safety training for counterparties amounted to approximately **73,000** hours

A total of **245,398** participants were in attendance



▲ Special EHS management training for team leaders of Fujian Region



▲ Examination on health and safety knowledge for senior and middle-level managerial staff



▲ Finals of the 2019 EHS Knowledge Competition

#### • Safety Activities

CR Cement organized safety culture activities to encourage all-staff participation in safety management, promote corporate safety culture and the philosophy of safety management. In 2019, the major operating regions and production plants organized 88 sessions of EHS knowledge competition with a total of 5,875 participants in attendance. A total of 11 teams of CR Cement participated in the final EHS knowledge competition organized by China Resources Group. During production safety month, 32 safety open day events were held with a total of 2,797 participants in attendance. 91 traffic safety week activities were organized, with a total of 6,024 participants in attendance. 36 advanced safety collectives and 63 advanced safety individuals were commended by production plants.



▲ In 2019, **1,135** safety emergency drills were organized by major operating regions and production plants

#### • Emergency Drills

CR Cement attaches great importance to emergency management, launches emergency drill activities and pays attention to implementation of drills on plans for tackling on-site emergency by the participation of employees at production sites to comprehensively improve capabilities to respond to emergency. In 2019, approximately 18,545 participants attended the 1,135 safety emergency drills organized by major operating regions and production plants.



▲ Emergency rescue drill of emergent incident at the mine of Pingnan Cement



## Enthusiastic Community Charity

### Charity Business Management

To further promote the launch of charitable community business and improve the corporate brand image, CR Cement strengthened the accountability management of charitable community activities as well as the supervision and discipline of state-owned enterprise in the aspect of poverty alleviation to more effectively reflect the social benefits of the Company's charitable community business. At the same time, the "Enforcement Regulations for Charitable Community Activities of China Resources Cement Holdings Limited" were amended and perfected according to the Charity Law of the People's Republic of China, relevant laws, regulations and policy documents issued by the State-owned Assets Supervision and the Administration Commission of the State Council regarding fulfillment of social responsibilities of state-owned enterprises and implementation of external donations, which had further regulated the management on review, approval and operation of our charitable community activities.

### Improve People's Living Environment

CR Cement always maintains a grateful heart with gratitude and integrates corporate development with social responsibility, government-enterprise friendly relationship, village-enterprise friendly relationship and sustainable development. We actively cooperate with local governments in launching various assistance work and support the infrastructure construction of various local counties, countryside, towns and villages. Through donations of cement products, we help neighbouring towns and villages in the construction of roads, repairs of bridges and improvement of community infrastructure through renovation and upgrade of old houses and launch of hygiene remediation activities. This creates a healthy, stable and harmonious community environment, effectively improves the living environment of villagers, raises the quality of life of villagers and promotes rural revitalization.



#### Luoding Cement helped in the rural revitalization of Fengtang Town



In order to support the implementation of the rural revitalization strategy of Fengtang Town and take the initiative to assume social responsibilities, Luoding Cement actively responded to the call and proactively donated cement and other building materials to 12 village [neighborhood] committees of Fengtang Town, including Luoyang Village and Dawangtang Village, to support all villages [neighborhood committees] to improve infrastructure construction. In 2019, Luoding Cement donated cement to help in building and repairing cement roads, which had benefited groups of more than 2,000 people from neighbouring villages.



▲ Luoding Cement helped Fengtang Town to newly construct and repair cement roads

### Focus on Poverty Alleviation

CR Cement actively helps the underprivileged public to solve practical difficulties by making donations in cash and in kind to underprivileged regions and underprivileged families, actively employing local residents in the vicinity of the company's location and supporting education development in underprivileged regions.

#### Investment in factories

RMB2.481 billion was invested to incorporate a total of 7 enterprises in national-level underprivileged counties which had employed 1,018 employees.

#### External donations

From 2015 to March 2020, external donations of approximately RMB9 million in total had been made to help neighbours and villagers to repair bridges, build roads and develop education business.

#### Support the construction of Hope Towns

From 2008 to the end of 2019, donations in cash and in kind to China Resources Hope Towns in Baise, Xibaipo, Gutian, Jinzhai, Jinggangshan and Haiyuan amounted to RMB3,953,100 in total. Employees were deployed to support the construction of China Resources Hope Town in Baise and Gutian.

#### Targeted poverty alleviation

From 2018 to February 2020, in response to the call of China Resources Group, 39 senior and middle-level managerial staff of the Company were organized to provide "one-on-one" support and assistance to 39 underprivileged university students in Haiyuan County, with cumulative subsidization funding of RMB93,000.

#### Investment in poverty alleviation

From 2015 to March 2020, the cumulative investment through donations in cash, in kind and other investment behaviours amounted to RMB15,570,300 to support poverty alleviation projects, including 9 projects of over RMB300,000.

I am very grateful for the help and encouragement given by the China Resources Study Grant. But a single word of gratitude cannot express my gratitude to the management and all employees of China Resources. I will live up to their expectations and work hard in order to reward the society.

—Yang Zhiwen, subsidized university student from Haiyuan County



▲ Cumulative donations of RMB2.06 million as of the end of 2019

#### Fengkai Cement helped "Guangdong Poverty Alleviation Day"



Fengkai Cement has participated in the "Guangdong Poverty Alleviation Day" activity for many consecutive years. In July 2019, Fengkai Cement actively responded to the initiative of "Launch 2019 Guangdong Poverty Alleviation Day" in Fengkai County and donated RMB200,000 to help the underprivileged local people win the battle against poverty as soon as possible. Since the establishment of "Guangdong Poverty Alleviation Day" in 2010, Fengkai Cement has participated in the activities and donated for 7 consecutive years. As of the end of 2019, cumulative donations amounted to a total of RMB2.06 million.



### Shangsi Cement helps to sell agricultural products

Shangsi County is one of the 21 key counties for poverty alleviation and development in Guangxi Zhuang Autonomous Region. Jihuai Village, where Shangsi Cement is located, is also listed as one of the underprivileged villages by the Shangsi County Government. The income of the villagers mainly depends on agricultural products such as sugar cane, paddy, watermelon and longan. In June 2019, the rains which lasted for consecutive days in Shangsi County caused the watermelon and longan planted by the villagers to become unsalable, which worried the fruit farmers. After understanding the situation, Shangsi Cement took the initiative to contact the fruit farmers to buy approximately 13,000 catties of watermelon and longan. In addition, employees were encouraged to mobilize families and friends and strengthen promotion efforts to open up wider markets for villagers.



### Caring for Future Talents

CR Cement is continuously concerned on education and development of children in the underprivileged mountainous regions and helped to create a better learning environment and ambience through donations of teaching materials, set-up of scholarships and study grants, and launch of charitable subsidized schooling, which assisted more children to obtain quality educational resources.



▲ Poverty alleviation study grant activity cum 2019 "Runmiao" donation ceremony of Nanning Cement



▲ Pingnan Cement's love and care "Dandelion" volunteer association launched funding activities for the underprivileged children

### Assist in Building a Healthy China

CR Cement actively implements the national strategy of "National Fitness" by organizing and participating in a wide variety of sports activities such as internal and external basketball games, football games, outdoor hiking and radio gymnastics competitions. We advocated for a civilized and healthy lifestyle, transmitted the concepts of all-staff work-out and healthy life. We promoted the in-depth integration of national fitness and national health to lay a solid foundation for achieving the dream for a leading sports nation.



### Guangxi Region sponsored the 14th Guangxi Zhuang Autonomous Region Provincial Games

The 14th Guangxi Zhuang Autonomous Region Games were ceremoniously opened on 18 November 2019 at Baise City Sports Center Stadium. The Games this year were grand sports events with the largest number of participants, the largest number of events and of the largest scale in the history of the regional games. Based on the concept of enriching the people's spiritual and cultural lives, Guangxi Region of CR Cement participated in this regional games through sponsorship, which provided strong support for the smooth organization of the regional games.



▲ Scene of the opening ceremony of the 14th Guangxi Zhuang Autonomous Region Provincial Games

### Devotion to Volunteer Services

CR Cement pays keen attention to caring for special groups and regularly organizes each unit to launch volunteer services, visit elderly care institutions and rehabilitation centres in the neighbouring villages, and express solicitude to the elderly without family, the general public in need, people with serious intellectual disabilities and the disabled, which benefits more people in need of help with our love and care bit by bit.



### Hegong Cement actively participated in fighting forest fires

In 2019, two very serious forest fires occurred in Hegong County. Shortly after the fires, upon receiving the notice from the county's military service department, Hegong Cement quickly gathered emergency rescue personnel to the designated location, participated in emergency rescue work, transported materials for frontline firemen and carried out logistical support work. They left only after the fires had been completely extinguished. The 2 emergency rescue missions are tests and inspections for Hegong Cement's Emergency Rescue Team, which is also a vivid manifestation of Hegong Cement's irresistible commitment to social responsibility.



▲ Volunteer activity of Hong Kong Headquarters and Redland Concrete



▲ Longyan Caoxi Cement sent warmth to the elderly

# Responsibility Management

## Strategy for Responsibility

By upholding the corporate mission "to provide customers with quality products and services, promote innovation and lead green development in the industry, thereby building an everlasting business", CR Cement have assimilated social responsibility into corporate operations. We prioritized the perspectives of stakeholders on issues such as shareholders, employees, customers, business partners and community, and continued to promote the implementation of social responsibility work, including consolidating safety management at production plants, improving management standards of environmental protection, reforming transformational measures for energy saving and emission reduction, implementing health management work and promoting co-processing projects. With an innovative spirit and a pragmatic attitude, we constantly promote transformation and upgrade of the cement industry in China and strive to achieve the beautiful vision "to become a respectable world-class cement enterprise".

## Governance of Responsibility

### Organization

In order to effectively promote social responsibility work and enhance the quality of report preparation, CR Cement established the "Corporate Culture and Social Responsibility Steering Committee". The Chairman and the Chief Executive Officer serve as the president and the vice president of the committee respectively, and are responsible for the leadership, promotion and decision-making of the Company's strategic directions with respect to social responsibility. At the same time, we also established the "Social Responsibility Report Preparation Committee", which is responsible for preparing the annual Social Responsibility Report in order to lay a solid foundation for the Company to launch its social responsibility work.

### Policies and Systems

To promote a more systematic and standardized approach towards social responsibility work, the Company revised social responsibility management mechanisms and indicator systems with reference to "GRI Sustainability Reporting Standards" of Global Reporting Initiative, "Environmental, Social and Governance Reporting Guide" of The Stock Exchange of Hong Kong Limited, "Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR4.0)" of Chinese Academy of Social Sciences, "Guidance on Social Responsibility

of Cement Enterprise", "Guidance on Social Responsibility Reporting of Cement Enterprise" and "Social Responsibility Evaluation Index System of Cement Enterprise" of China Cement Association, and the "China Resources Group Management Measures for Social Responsibility".

## Culture of Responsibility

CR Cement constantly consolidates its capability to fulfil its own responsibilities and creates "urban symbiosis". We have built a good brand image and corporate image in the industry through its socially valuable and sustainable brands of charitable businesses such as "Gratitude Fund", "Dandelion Love and Care Study Grant" and "co-processing projects by use of cement kilns".

- We actively organized and participated in internal and external social responsibility training, seminars and other activities to understand the latest domestic and international developments in social responsibility work and enhance the report drafters' understanding and grasp on the relevant theories of social responsibility as well as the standards and methods for report preparation.
- As the main drafting unit of group standards such as the "Guidance on Social Responsibility Reporting of Cement Enterprises" and the "Social Responsibility Evaluation Index System of Cement Enterprises", CR Cement, China Cement Association and other enterprises jointly carried out subject research and compiled group standards to provide advice and suggestions on the formation of industry standards of social responsibility practices.
- In active response to the initiatives of China Resources Group, CR Cement proactively participated in social responsibility appraisal activities to further benchmark outstanding enterprises in fulfilling social responsibility, find disparities and improve deficiencies, and strictly require the promotion of putting fulfilment of social responsibility into practice.



Scan the QR code and review the preparation of the Social Responsibility Report together with CR Cement

## Engagement with Responsibility

CR Cement is proactively concerned with the aspirations and expectations of our stakeholders and continuously explored ways of effective communications with stakeholders through information reporting, special reports, shareholders' meetings, site visits, community activities, staff activities and the Company's website for the disclosure of its performance, important activities and other information in a rigorous, timely and accurate manner as well as timely propagation of the Company's philosophy and dynamic fulfilment of responsibility. While enhancing stakeholders' understanding on and support to the Company, CR Cement absorbed the reasonable opinions and suggestions of internal and external stakeholders, for the continuous improvement of corporate operational management methods and increase of the Company's comprehensive competitiveness.

Aspirations of CR Cement's Stakeholders and Responses from the Company

Categories of Stakeholders	Aspirations and Expectations	Communications and Responses
Government and Regulatory Bodies	<ul style="list-style-type: none"><li>• Putting national policies into practice</li><li>• Protecting the environment and tackling climate change</li><li>• Securing occupational safety and health</li><li>• Supporting economic development and concerning on people's livelihoods</li><li>• Legal and compliant operations</li></ul>	<ul style="list-style-type: none"><li>• Strict implementation of national policies</li><li>• Promoting green development (production safety, energy saving, emission reduction and low-carbon environmental protection)</li><li>• Strengthening communications with government and regulatory institutions</li><li>• Compliance with laws and regulations, timely payment of taxes</li></ul>
Shareholders and Investors	<ul style="list-style-type: none"><li>• Continuously creating economic value</li><li>• Good corporate governance</li><li>• Corporate sustainable development</li></ul>	<ul style="list-style-type: none"><li>• Enhancing standards of corporate operation, results and asset value</li><li>• Perfecting information disclosure, decision-making processes of material matters and risk management</li><li>• Providing diversified communications channels and strengthening investor relations management</li><li>• Protecting the legal rights and interests of all shareholders</li><li>• Transformation with innovation for enhancing our own competitiveness</li></ul>
Customers	<ul style="list-style-type: none"><li>• Quality of products and services</li><li>• Protecting the rights and interests of customers</li><li>• Product innovation</li></ul>	<ul style="list-style-type: none"><li>• Comprehensive guarantee of product quality and improvement of customer service standards</li><li>• Establishing sound customer service system and improving mechanism for customer feedback and complaint handling</li><li>• Improving the standard of digitalization and intelligentization</li><li>• Encouraging innovation of products and technology</li><li>• Upholding and protecting security of customer data</li></ul>
Employees	<ul style="list-style-type: none"><li>• Fair employment</li><li>• Protecting the rights and interests of employees</li><li>• Fostering staff development</li><li>• Care for employees' health</li><li>• Providing a good working environment</li></ul>	<ul style="list-style-type: none"><li>• Adhering to the principle of equal employment and creating an equal and inclusive working environment</li><li>• Listening to employees' views and suggestions on effective communication platforms</li><li>• Formulating competitive remuneration and welfare systems</li><li>• Launching staff training and perfecting promotion mechanism</li><li>• Care for occupational health and reducing occupational risks</li><li>• Improving the working environment and team ambience, and care for employees in need</li><li>• Organizing activities for employees to enhance their senses of belonging and identity</li></ul>
Suppliers, Business Partners and Industry Associations	<ul style="list-style-type: none"><li>• Honest cooperation for mutual benefits</li><li>• Promoting industry standardization and development</li><li>• Supporting transformation and upgrade of the industry</li></ul>	<ul style="list-style-type: none"><li>• Adopting "Sunshine Procurement" and creating a responsible supply chain</li><li>• Strengthening communications and cooperation, building effective cooperation mechanisms and platforms</li><li>• Participating in the formulation of industry standards and technological research</li></ul>

Continued

Categories of Stakeholders	Aspirations and Expectations	Communications and Responses
Community and Environment	<ul style="list-style-type: none"> <li>Rational use of resources</li> <li>Protecting ecological environment</li> <li>Stimulating local employment</li> <li>Participating in community charity</li> </ul>	<ul style="list-style-type: none"> <li>Green production, green offices, and increasing comprehensive utilization efficiency of energy resources</li> <li>Construction of green mines, promotion of co-processing projects and stimulation of sustainable development</li> <li>Support for local education business, campus recruitment and community recruitment</li> <li>Active participation in community charitable activities and social volunteer activities</li> </ul>
Media	<ul style="list-style-type: none"> <li>Timely update of the Company's news and activities</li> <li>Open, transparent and reliable information</li> </ul>	<ul style="list-style-type: none"> <li>Timely disclosure of important information and news of the Company</li> <li>Active communications with media and timely responses</li> <li>Strengthening disclosure of key environmental indicators</li> <li>Optimizing public relations management</li> </ul>



## Issues Analysis

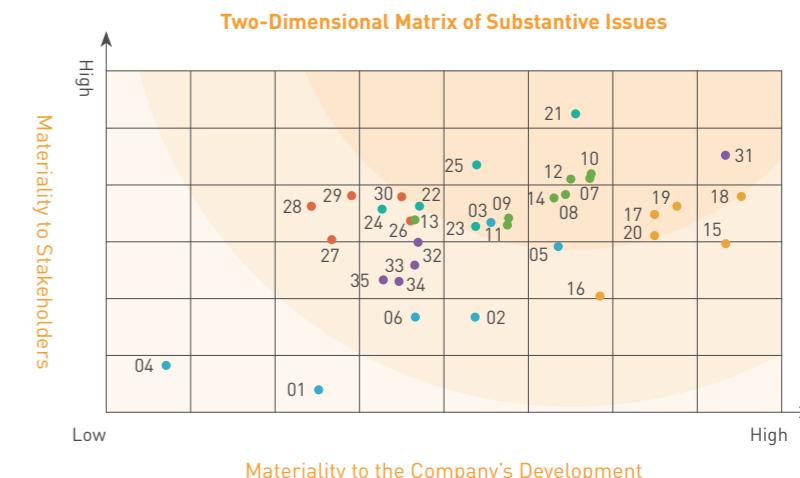
### Identification of Issues

To enhance the relevance and responsiveness of the report, CR Cement steadily strengthened the management of material social responsibility issues. We established a management model of material social responsibility issues and initially identified and selected material social responsibility issues that are closely related to the cement industry and with the distinctive characteristics of the Company from the two dimensions of "materiality to the Company's development" and "materiality to stakeholders" through the analysis of macro policies and industry policies and regulations, research on authoritative domestic and international social responsibility standards and benchmarking of excellent social responsibility reports in the cement industry prior to the publication of the social responsibility report.

### Analysis of Issues

To further enhance the relevance of material social responsibility issues, CR Cement specifically formulated the Chinese and English questionnaires of Survey on Material Issues of Social Responsibility Report, which were sent to our stakeholders by emails and peer-to-peer invitations so that we could extensively understand the degree of concern of internal and external stakeholders on the material social responsibility issues that have been preliminarily identified and selected. In 2019, a total of 2,204 valid questionnaires of Survey on Material Issues of Social Responsibility Report were returned and collected by the Company. Based on the survey results, the Company further analyzed and sorted the materiality of each material social responsibility issue, shortlisted the core social responsibility issues which highly concerned stakeholders and were closely related to sustainable development of the Company as the key points of information disclosure in the 2019 Social Responsibility Report.

## Prioritization of Issues



Scope	No.	Issues
Economic Responsibilities	01	Deepen the reform of state-owned enterprises
	02	Improve corporate governance and risk management
	03	Operate in accordance with law and build a line of defense against corruption
	04	Protect the rights and interests of shareholders and investors
	05	Improve company management efficiency and promote high-quality enterprise development
	06	Promote industry transformation and upgrade
Responsibilities to Environment	07	Plan for sustainable development
	08	Reduce the consumption of energy and resources, and recyclable use of resources
	09	Establish and improve environmental management system
	10	Strict management of pollutants
	11	Waste co-processing
Responsibilities to Employees	12	Strengthen ecological protection
	13	Actively tackle climate change
	14	Support charity activities of environmental protection and implement green office
	15	Optimize employee compensation and benefits
	16	Streamline development path of employees
Responsibilities to Customers	17	Emphasize employee integrity construction and integrity work
	18	Care for employees' occupational health
	19	Compliant employment to protect the rights and interests of employees
	20	Care for employees and assist employees in need
	21	Strengthen product quality management
Responsibilities to Business Partners	22	Reinforce intellectual property management
	23	Focus on innovation and intelligent manufacturing
	24	Provide diversified products
	25	Protect the rights and interests of customers and optimize customer service
	26	Regulate procurement behaviours
Responsibilities to Public	27	Promote supply chain's performance of obligations
	28	Protect the rights and interests of suppliers and lead the growth of dealers
	29	Focus on compliance management of suppliers and distributors
	30	Strengthen peer exchange and promote industry development
Responsibilities to Stakeholders	31	Implement production safety
	32	Strengthen communications with the community and participate in community development
	33	Engage in community charity
	34	Foster and drive employment
Responsibilities to Society	35	Participate in poverty alleviation and assist the underprivileged
	36	Other

## Honours of Responsibility

Over the years, CR Cement has continuously promoted and fulfilled its social responsibilities and proactively responded to the aspirations of stakeholders, which has been widely recognized by all sectors in the society and won numerous honours.

Actively participated in the application for project selection of China Resources Group, among which, the "project for research and application of domestic polyimide fiber filter material and ultra-clean emission technology" and "high-performance Portland cement project (specially designed for the Hong Kong-Zhuhai-Macao Bridge)" were awarded the Best Innovation Grant Award - "Product Technology Type" and Silver Award by China Resources Group respectively.

Won the "Best ESG materiality reporting (small to mid-cap)" at the "IR Magazine Awards – Greater China 2019" award ceremony held by "IR Magazine".

Won the awards of the Best CEO (Rank 3), the Best Corporate Governance (Rank 3), the Best ESG/SRI Metrics (Rank 3) and the Honoured Companies (Rank 4) in the Basic Materials sector at the dinner banquet of "2019 All-Asia Executive Team Most Honoured Companies in Corporate Governance" hosted by "Institutional Investor", an authoritative international financial magazine.

Guangzhou Zhuijiang Cement Co., Ltd. and China Resources Cement (Changjiang) Limited were awarded the Bronze Award for the Manufacturing Sector and the EcoChallenger of "BOCHK Corporate Environmental Leadership Awards 2018" respectively by the Federation of Hong Kong Industry.

China Resources Cement (Fengkai) Limited was awarded the Hong Kong – Guangdong Cleaner Production Excellent Partner (Manufacturing) Commendation by the Environment Bureau of Hong Kong and the Department of Industry and Information Technology of Guangdong Province.



▲ Scene of presentation of the Best Innovation Grant Award - "Product Technology Type" by China Resources Group



## Future Prospects

Looking ahead, under the supply-side structural reform and strict policies on environmental protection in China, the cement industry will face new challenges and opportunities. CR Cement will proactively grasp the opportunities in the development of the Guangdong-Hong Kong-Macao Greater Bay Area, explore business opportunities, and persistently and steadily enhance the three core strengths of the "lowest total costs, leading market position in the region, innovation-driven development". The Company will further enhance quality and efficiency of operation, deepen brand marketing and the construction of sales channels, strengthen R&D of new products, new technologies and new materials, and accelerate the development of informatization, digitalization and intelligentization. At the same time, the Company will be actively committed to social responsibility, accelerate the pace of transformation and innovation, explore the opportunities for extension of industry chain, promote co-processing by use of cement kilns, foster the business development of aggregates and prefabricated construction and continue to seek opportunities for strategic cooperation with domestic and overseas leading enterprises for the joint promotion of a higher quality sustainable development of the cement industry in China.

# Appendix

## Key Performance Indicators

Statistical Indicator	Unit	2017	2018	2019
<b>Economic Responsibilities</b>				
Turnover	HK\$ million	29,958	38,791	38,956
Profit before taxation	HK\$ million	4,884	11,335	12,008
Profit for the year	HK\$ million	3,593	8,007	8,694
Profit attributable to owners of the Company	HK\$ million	3,617	7,975	8,618
Equity attributable to owners of the Company	HK\$ million	30,309	37,691	41,980
Total assets	HK\$ million	56,527	60,506	61,171
Net assets (note 1)	HK\$ million	30,482	37,895	42,266
Return on net assets (note 2)	%	12.7	23.4	21.7
Return on total assets (note 3)	%	10.2	20.5	20.5
Ratio of value conservation and value appreciation of state-owned capital (note 4)	%	113.5	130.9	123.5
Earning before interest and taxation (note 5)	HK\$ million	5,522	11,979	12,462
Ratio of profit to costs (note 6)	%	18.9	39.7	42.8
Cost of sales	HK\$ million	20,728	23,371	23,298
Selling and distribution expenses	HK\$ million	1,784	1,985	1,987
General and administrative expenses	HK\$ million	2,676	2,545	2,329
Finance costs	HK\$ million	638	644	454
Industry ranking (note 7)	-	3	4	3
Number of commenced or concluded corruption lawsuits	-	0	0	0

**Notes:** 1. Net assets equal to total assets less total liabilities.

2. Return on net assets is calculated by dividing profit for the year by average net assets.

3. Return on total assets is calculated by dividing earning before interest and taxation by average total assets.

4. Ratio of value conservation and value appreciation of state-owned capital is calculated by dividing the sum of equity attributable to owners of the Company and dividend paid for the year by equity attributable to owners of the Company for the previous year, after taking the effect of exchange rate into consideration.

5. Earning before interest and taxation equals to the sum of profit before taxation and finance costs.

6. Ratio of profit to costs is calculated by dividing profit before taxation by the sum of cost of sales, selling and distribution expenses, general and administrative expenses and finance costs.

7. Source of data of industry ranking is China Cement Association. Assessment indicators included sales volume of cement, total profit, net profit, assets and market capitalization in 2019.

Continued

Statistical Indicator	Unit	2017	2018	2019
<b>Responsibilities to Customers and Business Partners</b>				
Total number of suppliers	-	6,631	8,007	9,074
Contract compliance rate	%	93	95	93
Handling rate of customers' complaints	%	100	100	100
Passing rate of product quality	%	100	100	100
Total R&D investment	RMB million	14.44	11.34	22.63
Number of R&D employees	-	41	45	45
Number of international, national or industrial standards contributed	-	3	1	1
Number of new patent licenses	-	33	29	19
Number of patents and patent applications	-	126	187	232
Number of strategic co-operation agreements executed	-	9	10	5
Expenditure on industry-academia-research cooperation (note 8)	RMB million	0.30	0.38	0
<b>Note:</b> 8. The 2019 industry-academia-research cooperation projects comprises prepaid projects in 2018 or unconcluded projects in the progress of implementation (no requirement to pay fees for continuing development), and there was no new external technology cooperation project in 2019. Hence, the expenditure on industry-academia-research cooperation was 0.				
<b>Responsibilities to Employees</b>				
Total number of employees	-	20,592	20,301	19,816
Number of employees in Mainland China	-	20,433	20,142	19,665
Number of employees in Hong Kong	-	159	159	151
Number of employees with disabilities	-	57	52	59
Proportion of female managerial staff	%	11	11	11
Execution rate of employment contracts	%	100	100	100
Social insurance coverage rate	%	100	100	100
Body check coverage rate	%	100	100	100
Number of employees attending health body check	-	20,592	20,301	19,816
Number of occupational disease occurrences	-	0	0	0
Average number of days of paid annual leave per employee (note 9)	days	13.0	13.4	13.8
Staff training coverage rate	%	100	100	100
Average investment in training per employee	RMB	381	346	436
Total investment in staff training	RMB million	7.84	7.02	8.64
Employee attrition rate	%	7.8	6.4	5.4
<b>Note:</b> 9. Average number of days of paid annual leave per employee is calculated based on the number of days of paid annual leave for employees in Mainland China.				

Continued

Statistical Indicator	Unit	2017	2018	2019
<b>Responsibilities to Public</b>				
Number of new recruitments	-	1,404	1,571	1,386
Charitable donations	HK\$ million	2.2	2.5	2.7
Taxation	HK\$ million	1,291	3,328	3,314
Proportion of local procurement [note 10]	%	49	51	62
Number of staff injured at work	-	10	9	13
Number of incidents of general and above levels	-	1	3	2
Fatalities	-	1	1	2
Fatality rate	‰	0.047	0.049	0.099
Number of participants in safety training	-	182,207	218,716	245,398
Investment in production safety	RMB million	130	146	156
Safety training coverage rate	%	100	100	100
Number of safety emergency drills	-	625	991	1,135
Number of specialized safety management personnel	-	205	212	192
Number of licensed safety management personnel	-	1,068	1,064	1,277
Number of registered safety engineers	-	44	55	59
<b>Note:</b> 10. The statistical scope of local procurement includes purchased materials other than seaborne coal, seaborne gypsum, some auxiliary materials and spare parts of centralized procurement.				
<b>Responsibilities to Environment</b>				
Total investment in environmental protection	RMB million	675	393	443
Investment in technological upgrade in energy-saving and emission reduction	RMB million	432	94	120
Consolidated energy consumption	'000 tons of standard coal	7,732	8,035	7,915
Consolidated energy consumption per RMB10,000 output	ton standard coal per RMB10,000	3.03	2.73	2.65
Consolidated energy consumption per RMB10,000 value addition	ton standard coal per RMB10,000	8.61	6.14	5.85
Proportion of cement sold in bag	%	45.0	38.9	35.6
Emission of nitrogen oxides [note 11]	tons	41,513	39,822	37,584
Emission intensity of nitrogen oxides [note 11]	kg per ton of clinker produced	0.6230	0.5715	0.5439
Average emission concentration of nitrogen oxides [note 11]	mg/m³	259	254	240
Emission of sulphur dioxide [note 11]	tons	2,726	2,352	1,824
Emission intensity of sulphur dioxide [note 11]	kg per ton of clinker produced	0.0409	0.0338	0.0264
Average emission concentration of sulphur dioxide [note 11]	mg/m³	16	18	13
Emission of particulate matters [note 11]	tons	2,472	2,361	2,083
Emission intensity of particulate matters [note 11]	kg per ton of clinker produced	0.0371	0.0339	0.0301

Continued

Statistical Indicator	Unit	2017	2018	2019
Average emission concentration of particulate matters [note 11]	mg/m³	11	11	9
Emission of greenhouse gases [note 11]	'000 tons of carbon dioxide equivalent	57,130	59,710	58,710
Emission intensity of greenhouse gases [note 11]	tons of carbon dioxide equivalent per ton of clinker produced	0.8574	0.8569	0.8497
Electricity consumption [note 12]	million kwh	6,220	6,500	6,426
Electricity consumption of cement and clinker [note 12]	million kwh	6,194	6,473	6,398
Electricity consumption of concrete [note 12]	million kwh	26	27	28
Electricity consumption per ton of cement	kwh	73.1	73.0	72.9
Electricity consumption per m³ of concrete	kwh	1.8	2.0	2.1
Coal consumption	'000 tons	9,834	10,254	10,033
Unit coal consumption per ton of clinker	kg	147.3	147.2	145.2
Standard coal consumption per ton of clinker	kg	106.9	106.5	105.5
Consumption of packaging materials [note 13]	tons	74,533	70,330	63,765
Consumption intensity of packaging materials [note 13]	kg per ton of cement packed in bag	2.18	2.19	2.17
Industrial waste utilized [note 14]	'000 tons	21,470	21,840	21,080
Municipal solid waste co-processed	tons	82,400	166,000	162,700
Urban sludge co-processed [note 15]	tons	49,700	49,300	56,500
Hazardous industrial waste co-processed	tons	6,700	8,700	7,200

**Notes:** 11. Scope of statistics includes the major discharge outlets of the Company's cement production plants.

12. Scope of statistics includes the power purchased externally for production by the Company.

13. Packaging materials refer to the packaging for cement sold in bags. In 2018, the scope of report had been adjusted from procurement quantity to consumption of packaging materials.

14. Scope of statistics of industrial waste includes coal gangue, stone residue, de-sulphur gypsum, fly ash and blast furnace slag.

15. 80% moisture content for wet sludge.

## Rating Report



### Rating Report of Social Responsibility Report 2019 of China Resources Cement Holdings Limited

Commissioned by China Resources Cement Holdings Limited, the Chinese Expert Committee on CSR Report Rating selected experts to form a rating team to rate the 2019 Social Responsibility Report of China Resources Cement Holdings Limited (hereinafter referred to as the "Report").

#### I. Rating Criteria

"Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR 4.0)" issued by Chinese Academy of Social Sciences and "Rating Standards for Corporate Social Responsibility Report of Chinese Enterprises (2020)" of Chinese Expert Committee on CSR Report Rating.

#### II. Rating Process

- The Rating Team reviewed and confirmed the "Confirmation Letter of Process Materials of Corporate Social Responsibility Report" and relevant supporting materials submitted by the preparation team of the Report;
- The Rating Team conducted review on the preparation process and the contents disclosed by the Report, then drafted the rating report;
- The vice president of the rating expert committee, the leader of the Rating Team and experts of the Rating Team jointly reviewed and signed off the rating report.

#### III. Rating Results



##### Process (★★★★★)

The Company established a Corporate Culture and Social Responsibility Steering Committee with the Chairman of the Board of Directors and the Chief Executive Officer assuming roles as the President and the Vice President of the Committee respectively, supervising the overall direction and being involved in the final review of the Report. The Company's CEO Office took the lead in setting up the Report Preparation Committee to coordinate the preparation of the Report with the general manager of the CEO Office as the Editor-in-Chief coordinating the detailed preparation of the Report. With a clear positioning in its functional value, the Report is positioned as an important tool for fully disclosing information regarding responsibility fulfilment, strengthening communications with stakeholders and improving social responsibility management. Substantive issues were identified based on national macro policies, international and domestic social responsibility standards, industry benchmarking analysis, the Company's major strategies and surveys on stakeholders. The Report will be released by organizing a special online conference, and will be available in electronic and printed formats, in Chinese and English versions, in simplified version, in long diagram version and other forms of presentations with excellent performance on the process.

##### Substantiveness (★★★★★)

The Report systematically discloses key issues facing the industry such as product quality management, technological innovation, occupational health management, production safety, R&D and application of environmental protection technologies and equipment, saving of energy resources, management of hazardous chemicals, reduction of "three wastes" emissions, and treatment and management of ecological environment, which are in full and detailed description with excellent performance on substantiveness.

##### Completeness (★★★★★)

The main contents of the Report systematically discloses 91.30% of the core indicators of the industry in which the Company operates from the perspectives of "Steady Operation, Build a Solid Foundation for Development", "Energy Saving and Emission Reduction, Build a Green Lifestyle", "Together with Us and Resources Heart, Build Talents in the Industry", "Precise Cement Engineering, Build Projects with Craftsman's Spirits", "Hand-in-Hand Together, Build a New Chapter in the Industry" and "Affection for Society, Build a Harmonious Future", with excellent performance on completeness.

##### Balance (★★★★★)

The Report reveals negative data such as "number of commenced or concluded corruption lawsuits", "handling rate of customers' complaints", "number of occupational disease occurrences", "employee attrition rate", "number of staff injured at work", "fatalities" and offered detailed descriptions on the specific

causes and rectification results of "customers' feedback on 'low liquidity' of cement", with an excellent performance on balance.

##### Comparability (★★★★★)

The Report discloses the comparative data of 90 key indicators for 3 consecutive years, such as "turnover", "passing rate of product quality", "number of new recruitments", "investment in production safety", "total investment in environmental protection" and "emission of greenhouse gases". The horizontal comparisons of "Best Corporate Governance (Rank 3)" and "Best ESG/SRI Metrics (Rank 3)" were carried out, with excellent performance on comparability.

##### Readability (★★★★★)

Based on the theory of stakeholders, the entire Report is led by the word "build" as the main theme. Through a clear framework and structure, it systematically shows the Company's responsibility actions and effectiveness in the key issues of organizational governance, environmental protection, staff development, quality assurance, customer service, cooperation with partners and community charity. Large real pictures across pages are adopted to display the scenes of characteristic business. Narrative introductions and key performance are embedded to provide concise outlines, which has enhanced the recognition and pleasure of reading the Report. The use of "knowledge extension" columns to interpret industry terminologies has enhanced the easiness of reading of the Report. The introduction of third-party testimonials has highlighted the significance of corporate's fulfillment of responsibilities, with an excellent performance on readability.

##### Innovation (★★★★★)

The Report's opening chapter sets up the responsibility theme of "Compact responsibilities, implement precise policies, resumption of operation and production with the "two corrects" -we are together to fight the epidemic", which systematically discloses the Company's actions and measures to combat the novel coronavirus epidemic and highlights the Company's commitments to responsibility. The beginning of each chapter outlines the "case study of practices of responsibilities", which focuses on highlights of the Company's annual practices and has strengthened the disseminating value of the Report. QR code has been embedded on the Report to extend reading and interpretation of the contents, which has enhanced the communications of the Report and leading performance in innovation.

##### Overall Rating (★★★★★)

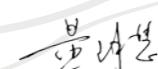
According to assessment of the Rating Team, the "Social Responsibility Report 2019 of China Resources Cement Holdings Limited" is awarded a five-star rating as an excellent corporate social responsibility report.



The Social Responsibility Report of China Resources Cement has received a five-star rating for the second consecutive year

#### IV. Suggestions for Improvement

Strengthen the disclosure of core industry indicators to further enhance the completeness of the Report.



Vice President of Chinese Expert Committee on CSR Report Rating



Leader of the Rating Team    Expert of the Rating Team

Process Evaluator: Ren Jiaojiao

Issuance date: 16 June 2020



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Enterprise Rating Files

## Reference Table of Indicators

Topic	Subtopic	Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR4.0) of Chinese Academy of Social Sciences	Page Number
Foreword		P1.1-1.3	P02
A Letter to Stakeholders		P2.1-2.2	P06
About CR Cement	Corporate Profile	P4.1-4.3, G1.1	P08
	CR Cement in 2019	P3.1	P10
	Organizational Structure	P4.1	P12
	Business Distribution	P4.2-4.3	P12
Compact responsibilities, implement precise policies, resumption of operation and production with the "two corrects" – we are together to fight the epidemic		P3.1-3.2	P14
Steady Operation, Build a Solid Foundation for Development	Case study of practices of economic responsibilities	P3.1-3.2	P20
	Standardize Corporate Governance	M1.1-1.3, M3.1, S1.1-1.2	P22
	Protect the Rights and Interests of Shareholders	M1.1, M1.4-1.5	P23
	Uphold the Integrity Red Line	M1.3, M3.1, S1.1-1.2	P24
	Support Lean Operations	M1.1, M2.4	P25
	Extension of Industry Chain	P4.2, M2.1, M2.4, M2.7	P26
Case study of practices of responsibilities to environment		P3.1-3.2	P30
Energy Saving and Emission Reduction, Build a Green Lifestyle	Strengthen Environmental Management	E1.1, A3	P32
	Save Energy Resources	M2.4, E1.3, E1.7, E1.9, E2.3-2.4, E2.18-2.20, A3	P32
	Practice Emission Reduction and Recycling	M2.4, M2.7, E1.2-1.4, E1.7, E1.9, E2.9-2.14, E2.16-2.18, E2.22, E2.24, A3	P33
	Attach Great Importance to Treatment and Management of Mines	M2.4, E1.7, E1.9-1.10, E2.9, E2.14, E2.18, E3.3-3.4, A3	P36
	Promote Co-Processing	M2.4, M2.7, E1.3, E1.7, E1.9, E2.16, E3.3	P38
	Advocate Green Culture	S1.17, E1.5, E1.7, E1.9, E2.4, E2.9, E2.12, E2.14, E2.16, E2.18, E3.1, E3.6	P39
Together with Us and Resources Heart, Build Talents in the Industry	Case study of practices of responsibilities to employees	P3.1-3.2	P42
	Safeguard the Rights and Interests of Employees	S1.5, S2.1-2.2, S2.4, S2.7-2.8, S2.10-2.13	P44
	Assist Staff Development	S2.14-2.16, A3	P46
	Create Prosperous Homes	S2.17-2.18, S4.7	P48

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Topic	Subtopic	Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR4.0) of Chinese Academy of Social Sciences	Page Number
Precise Cement Engineering, Build Projects with Craftsman's Spirits	Case study of practices of responsibilities to customers	P3.1-3.2	P52
	Focus on Product Quality	M2.2, M2.4, M2.14, M2.17, S2.14, A3	P54
	Promote R&D and Innovation	M2.1, M2.4, M2.7, S2.14, E1.3, A3	P55
	Optimize Customer Experiences	M2.2, M2.8-2.11, M2.13-2.15, M2.17-2.18, M3.5	P58
Hand-in-Hand Together, Build a New Chapter in the Industry	Case study of practices of responsibilities to business partners	P3.1-3.2	P62
	Deepen Strategic Collaboration	M3.4, M3.6	P64
	Drive Partners' Growth	M1.3, M2.4, M3.1, M3.3-3.4, M3.6-3.8, M3.10-3.12, M3.14-3.16, S1.1-1.2, S1.5, S4.2, S4.4, E1.3, E1.6-1.7, E1.9, E2.16	P65
	Lead Industry Development	G5.2, M2.4, M3.4, M3.6	P66
Affection for Society, Build a Harmonious Future	Case study of practices of responsibilities to public	P3.1-3.2	P70
	Implement Production Safety	M2.4, M2.7, M3.8, M3.10, S1.1-1.4, A3	P72
	Enthusiastic Community Charity	S4.1, S4.5-4.6, S4.10, S4.12-4.14, A3	P76
	Strategy for Responsibility	G1.1-1.2, G2.2-2.3	P80
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## Feedback

### Dear Readers:

Thank you for sparing your precious time to read the 2019 Social Responsibility Report of China Resources Cement Holdings Limited! This is the seventh Social Responsibility Report which CR Cement published to the public. In order to continuously improve the level of preparation of the social responsibility report and constantly raise the capability of fulfilling social responsibilities, we hope to listen to your opinions and suggestions. Please help complete the relevant questions in the feedback form and return the feedback to us by selecting any of the methods as follows:

<b>Company Address</b>	<b>Hong Kong</b> Room 4606-08, China Resources Building, 26 Harbour Road, Wanchai, Hong Kong Tel: (852) 3118 6800 Fax: (852) 3118 6830	<b>Shenzhen</b> 30/F, Tower A, Kingkey 100 Building, No.5016 Shennan Road East, Luohu District, Shenzhen Tel: (86) 0755-8269 1700 Fax: (86) 0755-8269 1777 Email: crcement@crc.com.hk
<b>Your Information</b>	Name: _____ Company: _____ Fax: _____ Telephone: _____ Position: _____ Email Address: _____	

- |                                  |   |
|----------------------------------|---|
| <b>Multiple-Choice Questions</b> | 1. Please rate the extent to which this report has reflected CR Cement's major impacts on economy, society and environment:<br><input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor |
|                                  | 2. Please rate the responses to and disclosure of issues which concern stakeholders in this report:<br><input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor                         |
|                                  | 3. Please rate the clarity, accuracy and completeness of the disclosed information, indicators and data in this report:<br><input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor     |
|                                  | 4. Please rate the readability of this report:<br><input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor  |
|                                  | 5. Please provide your overall rating of the 2019 Social Responsibility Report of China Resources Cement Holdings Limited:<br><input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor  |

- |                             |   |
|-----------------------------|---|
| <b>Open-Ended Questions</b> | 1. What are your suggestions on the social responsibility work of CR Cement?<br><hr/> 2. In your opinion, what are the deficiencies in this report?<br><hr/> 3. Which social responsibility information do you find valuable in this report?<br><hr/> 4. In your opinion, what additional social responsibility information needs to be disclosed in this report? |
|-----------------------------|---|

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