

Taiwan Cement Corp. (1101)

Construction Materials | TW

Strong business ethics and anti-corruption practices drive upgrade

MSCI
ESG RATINGS



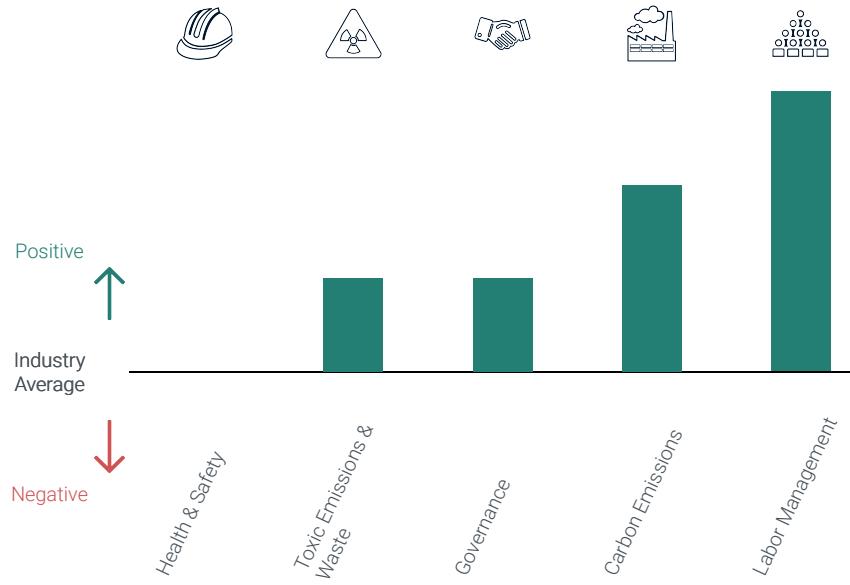
CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021

LAST REPORT UPDATE: September 07, 2022

Score attribution by key issue

This chart highlights the company's positioning relative to the industry average for each Key Issue that contributed to its ESG Rating as of September 07, 2022.



Last ESG Rating action

Rating action date: December 17, 2021

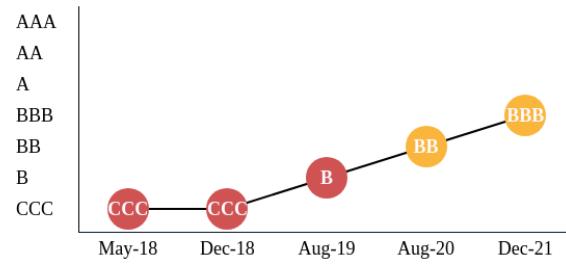
Taiwan Cement has been upgraded to 'BBB' from 'BB'.

The inclusion of the Corporate Behavior Theme in the company's Governance assessment is a key contributor to the upgrade due to TCC's strong business ethics policies and practices relative to peers. Evidence indicates TCC has adopted detailed ethics policies and associated compliance mechanisms (i.e., staff training and audits), certified to the ISO 37001 Anti-Bribery Management System standard. Our research also indicates improvements across environmental and social Key Issues.

- Cement manufacturing, and operations in Taiwan and China, present an increasingly stringent carbon regulatory environment for TCC—Taiwan aims to implement a carbon pricing mechanism by 2023; China launched a national emissions trading scheme in 2021. In addition to industry-standard programs (e.g. alternative fuels, renewable energy sourcing), TCC has robust carbon capture programs and an internal carbon pricing system tied to compensation mechanisms. Also, TCC aims to develop carbon-neutral concrete products by 2050.
- Operations in countries with historically high accident rates may elevate safety-related risks. TCC's safety management is on par with that of peers; in 2021, the company met its target to reduce TRIR and LTIR by 30% (Taiwan: -36% for both, China: -62% and -60%, respectively).
- The company's board has an independent majority; however, a combined CEO-chairman role and director overboarding may limit strong management oversight. We also found no detailed executive pay disclosures; this may impede comparison with peers.

Analysts: Kathryn Eunice Salonga, Morgan Ellis

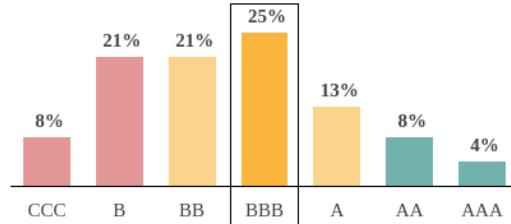
ESG Rating history



ESG Rating history shows five most recent rating actions

ESG Rating distribution

Universe: MSCI ACWI Index constituents, Construction Materials, n=24



Key scores

	Weight	Score (0-10)
Industry-Adjusted Score (Last Updated: December 17, 2021)		5.7
Weighted-Average Key Issue Score (Last updated: July 08, 2022)		4.6
Environmental Pillar Score	39%	4.3
Social Pillar Score	28%	4.9
Governance Pillar Score	33%	4.6

Report table of contents

ESG Rating tearsheet	Data report	
Rating model details	P02	Corporate governance data
Recent developments	P03	Key issue details
Corporate governance summary	P04	Appendix
Analyst insights	P05	Glossary
ESG Rating drill down	P06	P76

What is an ESG Rating? MSCI ESG Ratings aim to measure a company's resilience to long-term ESG risks. Companies are scored on an industry-relative AAA-CCC scale across the most relevant Key Issues based on a company's business model.



ESG Rating scorecard

As of September 07, 2022

KEY ISSUE	WEIGHT	INDUSTRY AVERAGE	SCORE (0-10)	CHANGE	EXPLANATION
Weighted-Average Key Issue Score		4.0	4.6		
> ENVIRONMENT	39%	3.8	4.3		
<u>Carbon Emissions</u>	20%	3.8	4.7		<ul style="list-style-type: none"> Carbon Intensity 74% lower than industry average
<u>Toxic Emissions & Waste</u>	19%	3.4	3.9		<ul style="list-style-type: none"> Initiatives to reduce toxic emissions and waste include aggressive targets
> SOCIAL	28%	4.1	4.9	▼0.1	
<u>Health & Safety</u>	14%	3.6	3.6		<ul style="list-style-type: none"> Strong safety performance relative to peers
<u>Labor Management</u>	14%	4.5	6.2	▼0.1	<ul style="list-style-type: none"> Limited risk of operational disruptions, employment litigation or reduced productivity relative to peers Evidence of employee engagement programs and initiatives including regular engagement surveys
> GOVERNANCE	33%	4.2	4.6	▲1.0	
<u>Corporate Governance</u>		5.3	4.5	▲0.9	<ul style="list-style-type: none"> The company falls into the lower scoring range relative to global peers, reflecting key areas of concern related to executive pay.
<u>Corporate Behavior</u>		4.7	7.3	▲0.7	<ul style="list-style-type: none"> Evidence of detailed policies on business ethics and corruption

* denotes company-specific Key Issue

This table shows the Key Issue scores and weights contributing to the company's ESG Rating and any changes to those scores since the last ESG Rating action. The range of possible scores is 0-10, where 10 is best and 0 is worst.

Rating model details

Taiwan Cement was rated based on a standard version of the Construction Materials Industry ESG Rating Model.

Company response

Response in last 12 months? _____ Yes

Date of last interaction _____ Dec 2021

Frequency of interactions* _____ High

All companies are provided the opportunity to review their data. For details, see [Appendix](#) in full ESG Rating report.

*Frequency of interactions represents interactions over the past two years: High = Ten or more incoming communications; Medium = Between 3 and 9 incoming communications; Low = Between 1 and 2 incoming communications



Recent developments affecting ESG scores

This table shows the last 10 score changes* and rating actions that have occurred in the past 12 months.

Date ▲	Type	Score (0-10)	Change	Explanation
	Current Weighted-Average Key Issue Score	4.6		
Jul 08, 2022	Data Update: Corporate Governance		▲0.1	Flags Added: Revenue Recognition, Revenue Recognition, Revenue Recognition Flags Removed: No Nomination Committee Governance Score changed based on the listed Key Metric(s): Asset-Liability Valuation, Expense Recognition, Asset-Liability Valuation, Expense Recognition, Asset-Liability Valuation, Expense Recognition
Jun 13, 2022	Methodology Update: ESG Ratings	4.5	▲0.1	Methodology Enhancements: scores recalculated to reflect enhancements to the ESG Ratings model.
Apr 29, 2022	Data Update: Corporate Governance		▲0.2	Flags Removed: Overboarded Exec Directors
Apr 26, 2022	Data Update: Exposure		▼0.1	Change in exposure score for the following Key Issue(s): Corporate Behavior, Labor Management,
Mar 11, 2022	Data Update: Corporate Governance		▼0.1	Governance Score changed based on the listed Key Metric(s): Cross Shareholdings
Mar 04, 2022	Data Update: Corporate Governance		▲0.1	Governance Score changed based on the listed Key Metric(s): Asset-Liability Valuation, Expense Recognition, Cross Shareholdings
Dec 17, 2021	ESG Rating action	4.3	▲0.1	Taiwan Cement has been upgraded to 'BBB' from 'BB'.
Dec 07, 2021	Data Update: Carbon		▼0.1	Decrease in performance score, management score
Nov 19, 2021	Data Update: Corporate Governance		▼0.1	Governance Score changed based on the listed Key Metric(s): Asset-Liability Valuation, Expense Recognition, Revenue Recognition
Oct 22, 2021	Data Update: Corporate Governance		▼0.1	Flags Added: CEO Equity Policy, Combined CEO/Chair

This table outlines the latest changes to specific data points that have occurred, the trigger for change (e.g. issuer feedback, data update or methodology enhancements) and the overall impact on the company's Weighted Average Key Issue Score. Companies are monitored on a continuous basis and significant score changes may trigger an ESG Rating action.

[View additional recent developments affecting the ESG score](#)

Most recent controversies

There are no recent new controversies or updates to ongoing controversies for this company.

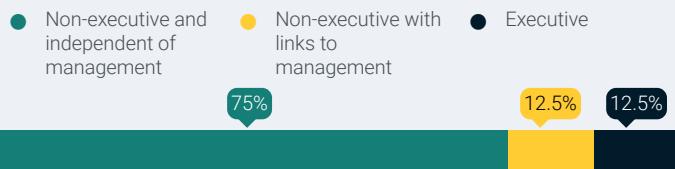


Corporate governance summary



Board of directors

Board type: Unitary Board



Board diversity



Ownership summary

Capital structure	Multiple Equity Classes	Top shareholders
Ownership classification	Principal Shareholder	Koo Family and Chang Family - 10.95% (Chinatrust Investment Co., Ltd. -3.95% via Tian-Yi Huo - 0.14% Chia Hsin Cement Corporation-3.56% via Kang-Lung Chang, Chia Hsin International -1.74 via Kang-Lung Chang International CSRC Investment Holdings Co - 1.69%, via Kung-Yi Koo - 0.01)
Key Owner Types	Family Firm	
Complex Ownership Structures	Cross Shareholdings	

CEO

Name: An Ping Chang

Total realized pay*:N/A

Tenure: 3 Years

Total summary pay*:N/A

*CEO pay figures are sourced from listed company annual reports and proxy filings. When a new CEO is named the pay figures for the previous CEO will be displayed until this information has been updated for the new CEO

Peer benchmarking

LARGEST 5 INDUSTRY PEERS (CONSTRUCTION MATERIALS)	Carbon Emissions	Toxic Emissions & Waste	Health & Safety	Labor Management	Corporate Governance	Corporate Behaviour	Rating & Trend
CRH PUBLIC LIMITED COMPANY	● ● ● ●	● ● ● ●	● ● ● ●	● ● ●	● ● ● ●	● ● ● ●	AAA ▲ ▲
Holcim AG	● ● ●	● ●	● ●	●	● ● ● ●	●	A ▲
VULCAN MATERIALS COMPANY	● ● ●	● ● ●	● ● ● ●	● ● ●	● ● ●	● ● ● ●	BBB ▲
Taiwan Cement Corp.	● ● ●	● ● ●	● ●	● ● ● ●	● ●	● ● ● ●	BBB ▲
ANHUI CONCH CEMENT COMPANY LIMITED	● ●	● ●	● ● ●	●	● ● ●	● ●	BB ▲
ULTRATECH CEMENT LIMITED	● ●	●	● ● ● ●	● ●	●	● ●	B ▲ ▲

QUARTILE KEY : Bottom Quartile ● Top Quartile ● ● ● ●

RATING TREND KEY : Maintain ▲ ▲ Upgrade ▲ Upgrade by two or more notches ▲▲ Downgrade ▼ Downgrade by two or more notches ▼▼

This table shows the company's positioning relative to five of its 24 industry peers. Industry peers are constituents of the MSCI ACWI Index in the ESG Ratings Industry classified as Construction Materials, as of September 07, 2022. The selection of five industry peers in this distribution is based on market capitalization, sorted by ESG Ratings (best to worst).



Analyst insights

- With Engie EPS acquisition, Taiwan Cement Corporation positions for entry into battery storage opportunities

August 02, 2021
Mathew Lee

Engie finalized the sale of its 60.5% stake in subsidiary Engie EPS to Taiwan Cement Corporation (TCC) in a deal worth EUR 132 million at EUR 17.10 per share (July 2021). Engie EPS will rebrand as New Horizons Ahead (NHOA). NHOA's portfolio of storage solutions positions the company well to capitalize on opportunities related to transport electrification and renewable energy.

TCC subsidiary TCC Green Energy Corp has developed both the first large-scale Battery Energy Storage System (BESS) and combined solar and wind power plant in Taiwan, where regulatory requirements set a 10% minimum of renewables consumption for heavy industry. NHOA's project development experience with storage solutions (300 MWh installed and 600 MWh under development globally) could help increase the viability of renewables to supply TCC's heavy industry operations in cement production and chemicals that our research indicates account for over 85% of its business revenue. As other heavy industries in Taiwan seek to comply with regulatory requirements, TCC could be tapping into a growing market that recently saw Taiwan Semiconductor Manufacturing Company (TSMC) sign the world's largest corporate Power Purchase Agreement (PPA) for 920 MW of wind energy in June 2020.

TCC subsidiary E-One Moli Energy Corp (Modicel), the largest lithium battery manufacturer in Taiwan announced a USD 350 million dollar investment to build a battery factory that can supply 24,000 electric vehicles a year in April 2021. NHOA's joint venture Atlante with automotive manufacturer Stellantis aims to build 35,000 fast chargers over 9,000 locations throughout Southern Europe by 2030, hoping to capitalize on the European Commission's proposed Fit for 55 emissions reduction policies calling for 100% zero emission cars by 2035 and regular electric charging intervals every 60km of highway. Modicel and NHOA thus give TCC exposure to rising demand for both electric vehicles and charging infrastructure.

- Brother-in-law holds onto chairmanship until Koo's successors are named

October 19, 2020
Sophia Cheng

In 2017, Leslie Koo, the third-generation Taiwanese cement scion, passed away from injuries sustained from a fall at age of 62. Following his sudden death, his brother-in-law Nelson Chang was appointed to be the acting chairman of Taiwan Cement Corp (TCC), the island's top cement maker founded by Koo's family. The family controls Taiwan Cement Group and its 17 affiliate companies across various sectors, including construction, biotech and chemical products. TCC is the group's flagship company, in which the family holds 9.8% voting rights.

The family has delegated Leslie Koo's responsibilities to other family members but a succession plan is still not apparent. Chang officially became the chairman and CEO of TCC, while Koo's nephew Koo Kung-yi, from the family's fourth generation, became the deputy chairman after the company's annual general meeting in June 2018. Koo Kung-yi was also appointed as chairman of two other affiliated companies in the TCC Group, China Synthetic Rubber Corp. and Taiwan Prosperity Chemical Corp. While it appears that some of the family's fourth generation has been given key roles in the companies, Koo's family has not announced a succession plan for TCC yet. (Leslie Koo's son Koo Gung-kai and daughter Koo Hsuan-hui, both in their 30s, do not hold any positions at TCC.) Besides, TCC has an entrenched board, based on MSCI's definition, with 26% of the board directors' tenure over 15 years and six out of 19 board members over age 70. TCC has the most directors older than 70 among the MSCI ACWI Taiwan Index constituents. In January 2020, the younger-generation Koo Kung-yi resigned as deputy chairman of TCC, citing too many work commitments. This led to speculation that this potential succession candidate would rather focus on the other two TCC Group companies where he serves. As a result of his resignation, his uncle, Chang, who has served on TCC's board for more than 26 years, is expected to continue to lead the board for the foreseeable future.



ESG Rating drill down

Description	As of prior rating action date: Aug 31, 2020		As of last rating action date: Dec 17, 2021		As of last report update date: Sep 07, 2022		Difference	
	Score	Weight	Score	Weight	Score	Weight	Score	Weight
ESG Rating Letter Grade	BB		BBB		BBB		-	-
Industry Adjusted Score	4.0		5.7		5.7		-	-
Industry Minimum Score	2.1		1.5		1.5		-	-
Industry Maximum Score	6.6		6.4		6.4		-	-
Weighted Average Key Issue Score	3.9		4.3		4.6		0.3	-
Environmental Pillar Score	3.7	44.0%	4.3	39.0%	4.3	39.0%	-	-
Carbon Emissions Key Issue Score	4.1	22.0%	4.7	20.0%	4.7	20.0%	-	-
Exposure Score	9.9		10.0		10.0		-	-
Business Segment Exposure Score	9.1		9.2		9.5		0.3	-
Geographic Exposure Score	5.9		5.9		5.9		-	-
Management Score	7.0		7.7		7.7		-	-
Management Score - Excluding Controversies	7.0		7.7		7.7		-	-
Practices Score	7.0		8.5		8.5		-	-
Performance Score	7.0		6.0		6.0		-	-
Toxic Emissions & Waste Key Issue Score	3.3	22.0%	3.9	19.0%	3.9	19.0%	-	-
Exposure Score	9.4		9.4		9.4		-	-
Business Segment Exposure Score	9.4		9.4		9.4		-	-
Management Score	5.7		6.3		6.3		-	-
Management Score - Excluding Controversies	5.7		6.3		6.3		-	-
Practices Score	6.0		6.9		6.9		-	-
Performance Score	5.0		5.0		5.0		-	-
Controversy Deduction	0.0		0.0		0.0		-	-
Social Pillar Score	4.5	34.0%	5.0	28.0%	4.9	28.0%	-0.1	-
Health & Safety Key Issue Score	3.2	17.0%	3.6	14.0%	3.6	14.0%	-	-
Exposure Score	8.3		8.3		8.3		-	-
Business Segment Exposure Score	7.1		7.1		7.2		0.1	-
Geographic Exposure Score	6.7		6.7		6.5		-0.2	-
Management Score	4.5		4.9		4.9		-	-
Management Score - Excluding Controversies	4.5		4.9		4.9		-	-
Practices Score	4.3		4.9		4.9		-	-
Performance Score	5.0		5.0		5.0		-	-
Controversy Deduction	0.0		0.0		0.0		-	-
Labor Management Key Issue Score	5.8	17.0%	6.3	14.0%	6.2	14.0%	-0.1	-
Exposure Score	6.1		6.1		6.2		0.1	-
Business Segment Exposure Score	7.1		7.1		7.2		0.1	-
Geographic Exposure Score	6.2		6.2		6.3		0.1	-
Company-Specific Exposure Score	3.8		3.8		3.8		-	-
Management Score	4.9		5.4		5.4		-	-
Management Score - Excluding Controversies	4.9		5.4		5.4		-	-



Description	As of prior rating action date: Aug 31, 2020		As of last rating action date: Dec 17, 2021		As of last report update date: Sep 07, 2022		Difference	
	Score	Weight	Score	Weight	Score	Weight	Score	Weight
Practices Score	4.9		5.4		5.4		-	
Controversy Deduction	0.0		0.0		0.0		-	
Governance Pillar Score*	3.3	22.0%	3.6	33.0%	4.6	33.0%	1.0	-
Corporate Governance Key Issue Score	3.3	22.0%	3.6		4.5		0.9	-
Board	4.1						-	
Pay	2.3						-	
Ownership & Control	7.2						-	
Accounting	5.5						-	
Governance Pillar Deductions**			-6.4		-5.4		1.0	-
Corporate Governance Deductions			-5.0		-4.3		0.7	-
Board			-2.2		-1.9		0.3	
Pay			-1.3		-1.3		-	
Ownership & Control			-0.9		-1.0		-0.2	
Accounting			-0.7		-0.1		0.6	
Corporate Behavior Deductions			-1.3		-1.1		0.2	-
Business Ethics			-1.3		-1.1		0.2	
Tax Transparency			0.0		0.0		-	

*Companies last rated prior to November 2020 will continue to show legacy Governance Key Issues (Corruption & Instability, Financial System Instability, Business Ethics & Fraud, and Anticompetitive Practices) in the ESG Rating drill down. These key issues will be removed from the drill down and replaced with Corporate Behavior and Corporate Governance Deductions at the next re-rating.

**Beginning November 2020, the Environmental Pillar Score and Social Pillar Score are calculated based on the weighted average of underlying Key Issue Scores, while the Governance Pillar Score is calculated based on 10 minus the sum of Corporate Governance and Corporate Behavior deductions. In the ESG Rating drill-down, deductions are scaled to indicate impact on the overall Governance Pillar Score. In subsequent sections of the report, deductions are scaled to show impact on the Corporate Behavior and Corporate Governance Theme Scores.

Overflow table: Recent developments affecting ESG scores

Date ▲	Type	Score (0-10)	Change	Explanation
	Current Weighted-Average Key Issue Score	4.6		
Jul 08, 2022	Data Update: Corporate Governance		▲0.1	Flags Added: Revenue Recognition, Revenue Recognition, Revenue Recognition Flags Removed: No Nomination Committee Governance Score changed based on the listed Key Metric(s): Asset-Liability Valuation, Expense Recognition, Asset-Liability Valuation, Expense Recognition, Asset-Liability Valuation, Expense Recognition
Jun 13, 2022	Methodology Update: ESG Ratings	4.5	▲0.1	Methodology Enhancements: scores recalculated to reflect enhancements to the ESG Ratings model.
Apr 29, 2022	Data Update: Corporate Governance		▲0.2	Flags Removed: Overboarded Exec Directors
Apr 26, 2022	Data Update: Exposure		▼0.1	Change in exposure score for the following Key Issue(s): Corporate Behavior, Labor Management,
Mar 11, 2022	Data Update: Corporate Governance		▼0.1	Governance Score changed based on the listed Key Metric(s): Cross Shareholdings
Mar 04, 2022	Data Update: Corporate Governance		▲0.1	Governance Score changed based on the listed Key Metric(s): Asset-Liability Valuation, Expense Recognition, Cross Shareholdings
Dec 17, 2021	ESG Rating action	4.3	▲0.1	Taiwan Cement has been upgraded to 'BBB' from 'BB'.
Dec 07, 2021	Data Update: Carbon		▼0.1	Decrease in performance score, management score
Nov 19, 2021	Data Update: Corporate Governance		▼0.1	Governance Score changed based on the listed Key Metric(s): Asset-Liability Valuation, Expense Recognition, Revenue Recognition
Oct 22, 2021	Data Update: Corporate Governance		▼0.1	Flags Added: CEO Equity Policy, Combined CEO/Chair
Oct 20, 2021	Data Update: Controversies		▲0.2	Minor controversy case(s): (1) China: CNY 300,000 SAMR penalty for the alleged failure to declare joint venture with OYAK
Sep 28, 2021	Issuer Verification: ESG		▲0.3	Feedback provided on Health & Safety, Labor Management and Toxic Emissions & Waste
Sep 28, 2021	Issuer Verification: ESG		▲0.3	Feedback provided on Health & Safety, Labor Management and Toxic Emissions & Waste
Aug 10, 2021	Data Update: Corporate Governance		▼0.2	Governance Score changed based on the listed Key Metric(s): Revenue Recognition, Asset-Liability Valuation, Entrenched Board

Taiwan Cement Corp. (1101)

MSCI
ESG RATINGS



CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

Jun 18, 2021	Data Update: Corporate Governance		▲0.2	Flags Removed: Multiple Equity Classes with Different Voting Rights Governance Score changed based on the listed Key Metric(s): Related Party Transactions
Jun 11, 2021	Data Update: Corporate Governance		▼0.2	Flags Added: Multiple Equity Classes with Different Voting Rights Flags Removed: Business Combination Provision Governance Score changed based on the listed Key Metric(s): Asset-Liability Valuation, Expense Recognition, Revenue Recognition, Cross Shareholdings
Mar 05, 2021	Data Update: Corporate Governance		▼0.1	Flags Added: Overboarded Exec Directors
Feb 10, 2021	Issuer Verification: ESG		▲0.1	Feedback provided on Health & Safety and Toxic Emissions & Waste
Nov 05, 2020	Methodology Update: ESG Ratings	3.6	▼0.4	Methodology Enhancements: scores recalculated to reflect enhancements to the ESG Ratings model.
Oct 23, 2020	Data Update: Governance		▲0.1	Governance Score changed based on the listed Key Metric(s): Asset-Liability Valuation, Expense Recognition, Revenue Recognition
Aug 31, 2020	ESG Rating action	3.9	▲0.1	Taiwan Cement has been upgraded to 'BB' from 'B'.
Aug 31, 2020	Data Update: Governance			Flags Added: Revenue Recognition Governance Score changed based on the listed Key Metric(s): Asset-Liability Valuation, Expense Recognition
Aug 18, 2020	Data Update: Carbon		▲0.3	Increase in practices score, management score, exposure score
Aug 14, 2020	Data Update: Governance		▲0.2	Flags Removed: Revenue Recognition Governance Score changed based on the listed Key Metric(s): Asset-Liability Valuation, Expense Recognition
Jun 26, 2020	Data Update: Governance		▼0.1	Flags Removed: Asset-Liability Valuation, Expense Recognition Governance Score changed based on the listed Key Metric(s): Revenue Recognition
Jun 23, 2020	Data Update: Governance		▲0.2	Flags Added: Asset-Liability Valuation, Expense Recognition Flags Removed: Leadership Concerns Governance Score changed based on the listed Key Metric(s): Revenue Recognition
Jun 19, 2020	Data Update: Governance		▼0.1	Flags Added: Leadership Concerns
Jun 16, 2020	Data Update: Governance		▲0.1	Flags Added: Audit Committee Industry Expert, Business Combination Provision, Combined CEO/Chair Flags Removed: Director Removal Without Cause, Leadership Concerns Governance Score changed based on the listed Key Metric(s): Cross Shareholdings, Asset-Liability Valuation, Expense Recognition, Revenue Recognition
Dec 20, 2019	Data Update: Governance		▼0.3	Flags Added: Overboarded Audit Committee Members, Overboarded Non-Exec Directors



CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

Governance Score changed based on the listed Key Metric(s):
Related Party Transactions

Aug 05, 2019

ESG Rating action

3.1

Taiwan Cement has been upgraded to 'B' from 'CCC'.



Corporate Governance

Score	Change (since rating)	Quartile	As of
4.5	▲ 0.9	● ●	Jun 29, 2022

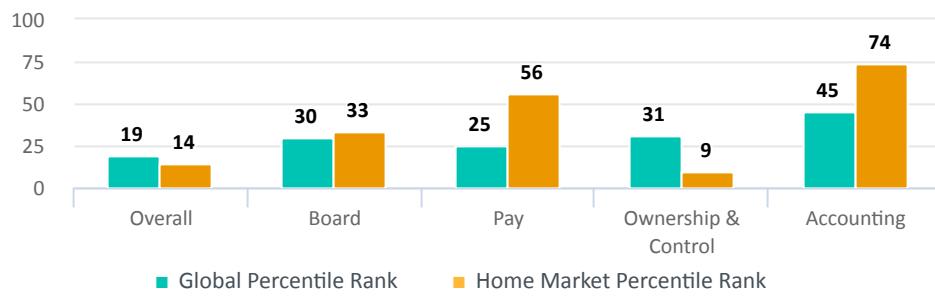
Market Cap: 8,567,043,532 USD

Home Market: Taiwan

Last Data Update:

Jun 29, 2022

GOVERNANCE THEMES AND RANKINGS



SUMMARY

Taiwan Cement falls into the lower scoring range for all the companies we assess relative to global peers, indicating the presence of significant risks in one or more areas. The key areas of concern relate to: executive pay.

KEY DATES

Financial Year End	December 31
Annual Filing Date	Apr 30, 2022
AGM Date	May 26, 2022

WEBSITE

<https://www.taiwancement.com/>

*Key areas of concern include flagged key metrics within the three sub-issues that represent the largest scoring deductions. Please review the full report to see the complete set of flagged key metrics.

KEY AREAS OF CONCERN*

SCORING DEDUCTIONS

Pay Figures

🚩 Executive Pay Disclosure

(-1.20)

Ownership Structure

🚩 Cross Shareholdings

(-1.00)

Board Independence

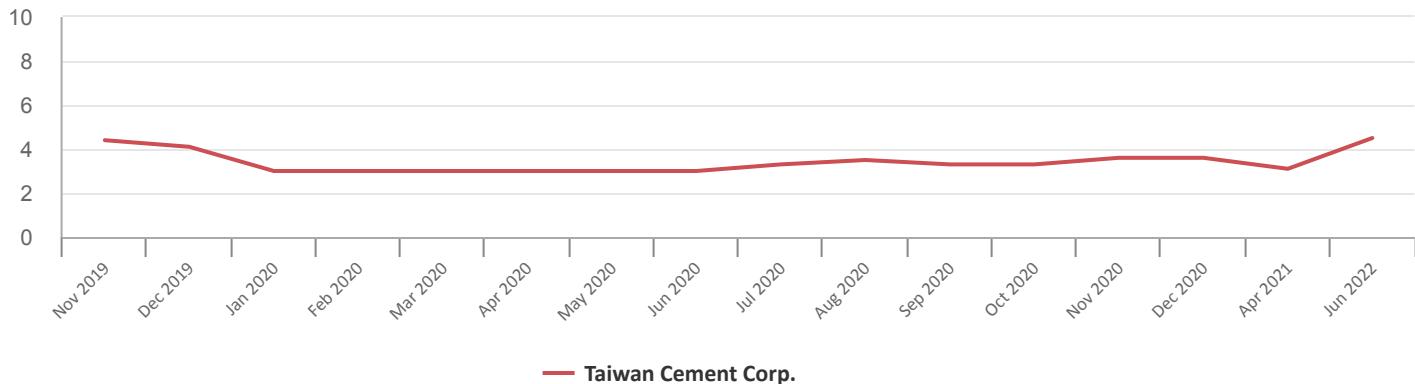
🚩 Related Party Transactions

(-0.70)

🚩 Board Majority Independent of Other Interests



CORPORATE GOVERNANCE SCORE HISTORY



CHANGES TO FLAGGED KEY METRICS (SINCE MAY 2021)

Key Metric	Key Metric Change	Date	Score Change*	Change Notes
No Nomination Committee	Flag Removed	Jul 07, 2022	0.30	Nomination committee function disclosed
Revenue Recognition	Flag Removed	Jun 12, 2022	0.53	Methodology enhancements
No Nomination Committee	Flag Added	Jun 12, 2022	-0.30	Methodology enhancements
Board Majority Independent of Other Interests	Flag Added	Jun 12, 2022	-0.30	Methodology enhancements
Overboarded Exec Directors	Flag Removed	Apr 27, 2022	0.50	
Combined CEO/Chair	Flag Added	Oct 18, 2021	-0.20	
CEO Equity Policy	Flag Added	Oct 18, 2021	-0.20	
Significant Votes Against Directors	Flag Removed	Aug 31, 2021	0.50	AGM voting results updated
Entrenched Board	Flag Removed	Aug 31, 2021	0.80	
Combined CEO/Chair	Flag Removed	Aug 31, 2021	0.20	
CEO Equity Policy	Flag Removed	Aug 31, 2021	0.20	
Significant Votes Against Directors	Flag Added	Aug 03, 2021	-0.50	AGM voting results updated
Multiple Equity Classes with Different Voting Rights	Flag Removed	Jun 15, 2021	0.45	
Multiple Equity Classes with Different Voting Rights	Flag Added	Jun 10, 2021	-0.45	
Business Combination Provision	Flag Removed	Jun 10, 2021	0.10	

Note: A full list of score changes (including where there is no Key Metric Change) is included in the Appendix.

*Score change available in respect of changes dated on or after 13 December 2017.



CCC B BB BBB A AA AAA

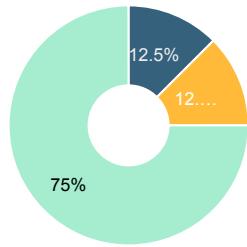
RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

BOARD OVERVIEW

Board Type: Unitary Board

Board of Directors

Chair	An Ping (Nelson) Chang	Since: Jan 24, 2017
CEO	An Ping (Nelson) Chang	Since: Jul 17, 2019



■Executive ■Links to Management ■Independent of Management



BOARD

The policies and practices of the Taiwan Cement board fall within the average scoring range relative to global peers. We have flagged this board for potential concerns regarding the presence of certain related party transactions and some non-executives may have too many other public board commitments.

0-10 Score	Global Percentile Rank	Home Market Percentile Rank
5.9	30th (Average)	33rd (Average)

KEY METRICS SCORING

Deduction

AUDIT OVERSIGHT

- 🚩 Audit Committee Industry Expert -0.10
- 🚩 Overboarded Audit Committee Members -0.10

BOARD EFFECTIVENESS

- 🚩 Overboarded Non-Exec Directors -0.50

BOARD INDEPENDENCE

- 🚩 Related Party Transactions -0.20
- 🚩 Board Majority Independent of Other Interests -0.50

BOARD LEADERSHIP

- 🚩 Combined CEO/Chair -0.20
- 🚩 Independent Chair -0.10
- 🚩 Chair not Independent & No Independent Lead Director -0.10

BOARD SKILLS & DIVERSITY

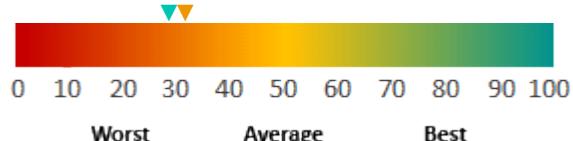
- 🚩 Risk Management Expertise -0.20
- 🚩 Not 30% Female Directors -0.10

PAY OVERSIGHT

- 🚩 Pay Committee Concerns -0.30

BOARD PERFORMANCE VS.

▼ Global ▼ Home Market





LEADERSHIP

CHIEF EXECUTIVE OFFICER

History	CEO Since	Until	Name	Gender	Age
Current	Jul 2019		An Ping (Nelson) Chang	M	
Former	Jul 1998	Jan 2017	Cheng-Yun Koo	M	

CHAIR

History	Chair Since	Until	Name	Gender	Age
Current	Jan 2017		An Ping (Nelson) Chang	M	
Former	Apr 1988	Jan 2017	Cheng-Yun Koo	M	



BOARD OF DIRECTORS

The Taiwan Cement board currently has an independent majority, which enables it to more effectively fulfill its critical function of overseeing management on behalf of shareholders.

Number of Board Meetings: 13

Non-executives meet in absence of Executives: No

Name	M/F	Age	Tenure (Years)	Boards	Independent of Mgmt	Independent of Other Interests	Management Link/Designation Reason	Nationality
An Ping (Nelson) Chang <small>COB CEO I \$</small>	M		28	2	No	No	Family Firm Director; Executive	Taiwan
Chi Chia Hsieh	M		6	2	Yes	No	Special Shareholder Representative	Taiwan
Chi-Te Chen	M		1	2	Yes	No	Special Shareholder Representative	Not Disclosed
Chien (James) Wen <small>\$</small>	M		4	1	Yes	No	Special Shareholder Representative	Taiwan
Chih-Chung Tsai <small>\$</small>	M		4	1	Yes	No	Special Shareholder Representative	Taiwan
Chun Ying Liu	F	47	4	1	Yes	No	Special Shareholder Representative	Taiwan
Jong-Peir (John) Li <small>I \$</small>	M		4	1	No	No	Special Shareholder Representative; Executive	Taiwan
Kang Lung (Jason) Chang	M		10	1	No	No	Family relationship; Family Firm Director	Taiwan
Kenneth C.M. Lo <small>\$</small>	M		17	1	Yes	No	Special Shareholder Representative	Taiwan
Kung Yi Koo	M		4	1	No	No	Non-Executive Employee; Family relationship; Family Firm Director	Taiwan
Ling Tai (Lynette) Chou <small>\$</small>	F		4	1	Yes	Yes		Taiwan
Mei-Hwa Lin	F		1	1	Yes	Yes		Not Disclosed
Por-yuan Wang	M		13	1	Yes	No	Special Shareholder Representative	Taiwan
Shiou-Ling (Sherry) Lin	F		1	2	Yes	Yes		Taiwan
Victor Wang <small>\$</small>	M		10	1	Yes	Yes		Taiwan
Yu-Cheng (Arthur) Chiao	M		10	5	Yes	Yes		Taiwan
	F	# >= 70	# >= 15 yrs	# >= 4				
Total (of 16)	4	0	2	1	12	5		
Percentage	25%	0%	12.5%	6.3%	75%	31.3%		

Note: Board count includes the membership of this board.

\$ - Financial Expert (7) I - Industry Expert (2) CEO - Chief Executive Officer COB - Chair of the Board



RELATED PARTY TRANSACTIONS

The risk to minority shareholders arising from related party transactions is a function of the nature of the related party, the relative size of the transaction and the pricing of the transaction. The board, and in particular the independent directors or audit committee, play a key role in the protection of minority shareholders' interests, and monitoring and managing potential conflicts of interest of management, board members and shareholders.

Reported Transactions

RPT with affiliated companies, major investors, merged company with significant influence includes operating income and expenses and interest expenses.

For the two most recently reported fiscal years, these value of these transactions can be summarised as follows :

Fiscal Year	Related Party Types	Aggregate Transaction Value		Type
		Value (CUR)	% of Total	
Dec 31, 2021	Other	3,067,087 TWD	0.003% of Total Revenue	Recurring income from related party
		5,468,566 TWD	0.006% of Expenses	Recurring purchases from related party
Dec 31, 2020	Other	2,629,691 TWD	0.002% of Total Revenue	Recurring income from related party
		4,939,026 TWD	0.006% of Expenses	Recurring purchases from related party

Sources : AR 2020 p. 155-158, 2021 AR pg 78

BOARD EFFECTIVENESS

There appears to be director overboarding on this board, with at least one non-executive director sitting on too many boards. MSCI ESG Research considers a non-executive director to be overboarded when they sit on three or more additional boards (i.e. four total boards, including the rated company) in MSCI ESG Research's corporate governance research universe. For CEOs and other executive directors, we have established a limit of two additional boards (i.e. three boards including the rated company).

Nomination Committee

Name	M/F	Age	Board Tenure (Years)	Independent of Mgmt	of Other Interests	Committee Status
An Ping (Nelson) Chang I \$	M		28	No	No	Member
Kenneth C.M. Lo \$	M		17	Yes	No	Member
Ling Tai (Lynette) Chou \$	F		4	Yes	Yes	Member
Shiou-Ling (Sherry) Lin	F		1	Yes	Yes	Member
Yu-Cheng (Arthur) Chiao	M		10	Yes	Yes	Member

\$ - Financial Expert (3) I - Industry Expert

BOARD SKILLS & DIVERSITY

We have flagged the Taiwan Cement board for gender diversity concerns.

A board with one or more active CEOs and overboarded directors may not be able to provide effective oversight of management. Their other roles may limit the time and attention required to fulfill their fiduciary duties. The company's 'Below Average' rating for pay may be an indication of a management-friendly board due to the presence of one or more active CEOs on the board, which may be magnified by the apparent entrenchment of the board.



CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

AUDIT OVERSIGHT

Audit Committee - Number Of Meetings: 12

The Taiwan Cement board of directors includes a fully independent audit committee and at least one member of that committee meets our standards for financial expertise.

Name	M/F	Age	Board Tenure (Years)	Boards	Independent of Mgmt	Independent of Other Interests	Committee Status
Ling Tai (Lynette) Chou \$	F		4	1	Yes	Yes	Member
Mei-Hwa Lin	F		1	1	Yes	Yes	Member
Shiou-Ling (Sherry) Lin	F		1	2	Yes	Yes	Member
Victor Wang \$	M		10	1	Yes	Yes	Chair
Yu-Cheng (Arthur) Chiao	M		10	5	Yes	Yes	Member

\$ - Financial Expert (2)

Risk Committee - Number Of Meetings: 2

Name	M/F	Age	Board Tenure (Years)	Independent of Mgmt	Independent of Other Interests	Committee Status
Ling Tai (Lynette) Chou \$	F		4	Yes	Yes	Member
Shiou-Ling (Sherry) Lin	F		1	Yes	Yes	Chair
Victor Wang \$	M		10	Yes	Yes	Member

\$ - Financial Expert (2)

PAY OVERSIGHT

Pay Committee - Number Of Meetings: 4

The Taiwan Cement board includes an independent pay committee, which is considered best practice for oversight of executive pay according to international corporate governance standards.

Name	M/F	Age	Board Tenure (Years)	Independent of Mgmt	Independent of Other Interests	CEO Role?	Committee Status
Ling Tai (Lynette) Chou \$	F		4	Yes	Yes		Member
Mei-Hwa Lin	F		1	Yes	Yes		Member
Shiou-Ling (Sherry) Lin	F		1	Yes	Yes		Member
Victor Wang \$	M		10	Yes	Yes		Member
Yu-Cheng (Arthur) Chiao	M		10	Yes	Yes	Active	Chair

\$ - Financial Expert (2)



CCC | B | BB | **BBB** | A | AA | AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

CONTROVERSIES & EVENTS

No major relevant controversies have been uncovered.



PAY

Executive pay practices at Taiwan Cement include one or more areas of concern regarding the alignment of management interests with those of the company's shareholders. Areas of particular concern include poor disclosure in relation to executive pay.

0-10 Score	Global Percentile Rank	Home Market Percentile Rank
2.3	25th (Below Average)	56th (Average)

KEY METRICS SCORING

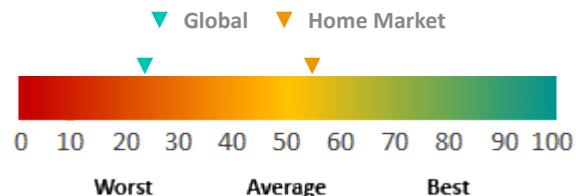
Deduction	
NON-EXECUTIVE DIRECTOR PAY	
🚩 Director Equity Policy	-0.10
PAY FIGURES	
🚩 Executive Pay Disclosure	-1.20
PAY PERFORMANCE ALIGNMENT	
🚩 CEO Equity Policy	-0.20
🚩 Clawbacks & Malus	-0.20

PAY FIGURES

DISCLOSURE

Disclosure should include, at minimum, pay for each executive member of the Board of Directors (or Management Board for companies with a two-tier board structure) on an individualized basis or in cases where there are no executive members, the CEO. The individualized disclosure should include separate information on the amount of each of the following (where such a component is provided): salary, short-term Incentives, long-term Incentives, pensions, benefits, and any one-off payments (such as recruitment or retention awards).

PAY PERFORMANCE VS.



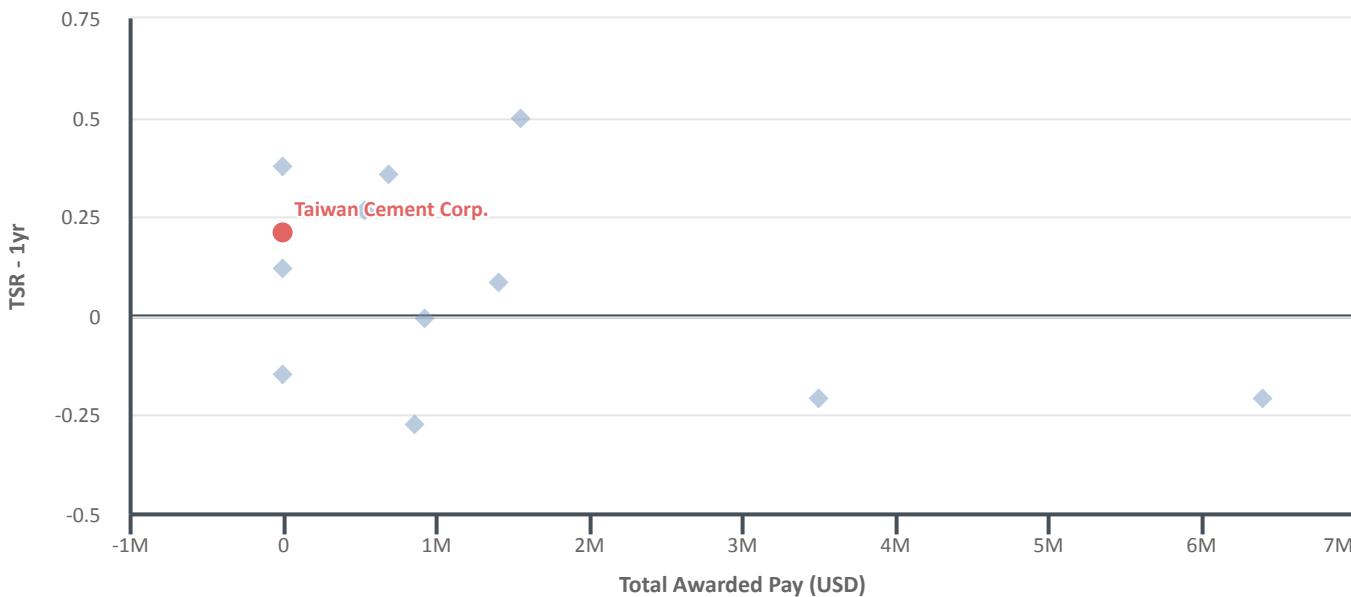


PAY PEER GROUP

MIDCAP - EMERGING - CONSTRUCTION MATERIALS (12 COMPANIES)

Company	Home Market	Market Cap (USD m)	Pay Year	1 Yr TSR	Total CEO Annual Pay (USD)	CEO Name	CEO Since
SHREE CEMENT LIMITED	India	9,728	2022	-0.21%	6,409,271	Bangur	Apr 2011
SHREE CEMENT LIMITED	India	9,728	2022	-0.21%	3,507,163	Bangur	Aug 2012
AMBUJA CEMENTS LIMITED	India	9,551	2021	0.50%	1,552,958	Akhoury	Feb 2020
CHINA JUSHI CO., LTD	China	8,446	2021	0.08%	1,408,804	Zhang	Mar 2005
Huaxin Cement Co., Ltd.	China	4,379	2020	-0.01%	923,576	Li	Apr 2003
CHINA RESOURCES CEMENT HOLDINGS LIMITED	China	4,315	2021	-0.28%	858,356	Ji	Sep 2016
ACC LIMITED	India	5,420	2021	0.36%	692,804	Balakrishnan	Feb 2020
POSCO CHEMICAL CO., LTD.	Korea	9,730	2021	0.27%	530,810	Min	Mar 2019
BUA Cement PLC	Frontier	4,963	2021	-0.15%		Binji	Dec 2019
Asia Cement Corporation	Taiwan	5,069	2021	0.12%		Lee	Aug 2000
Taiwan Cement Corp.	Taiwan	8,835	2021	0.21%		Chang	Jul 2019
CEMEX, S.A.B. de C.V.	Mexico	5,732	2020	0.37%		Gonzalez Olivier	May 2014

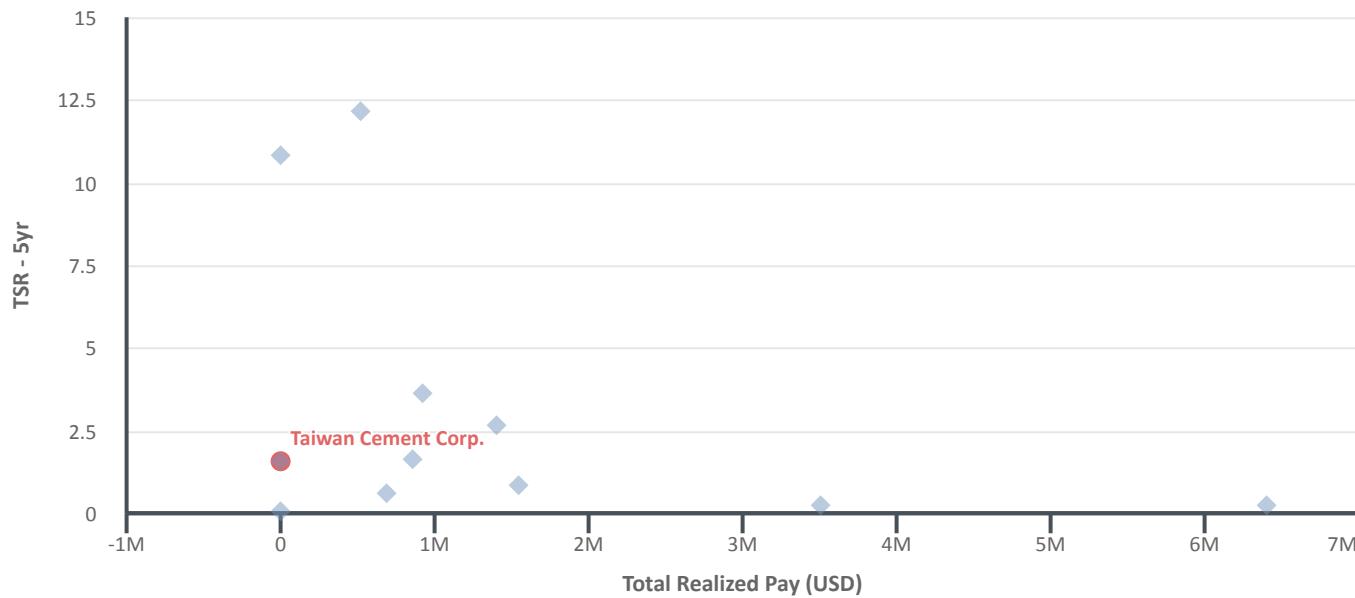
CEO TOTAL AWARDED PAY VERSUS PAY PEER GROUP



Pay Peers (♦) are used in the calculation of the Key Metric CEO Pay Total Summary and selected as set out in the MSCI Governance Metrics Methodology Document.



CEO TOTAL REALIZED PAY VERSUS PAY PEER GROUP



Pay Peers (♦) are used in the calculation of the Key Metric CEO Pay Total Summary and selected as set out in the MSCI Governance Metrics Methodology Document.

PAY PERFORMANCE ALIGNMENT

CEO & EXECUTIVE EQUITY

No effective stock ownership guidelines have been identified.

No CEO equity policy found.

Executive	Tenure (Years)	Shares Held	YoY % Change	Shareholding As % of Salary
An Ping (Nelson) Chang \$ I	28	2,188,553	0.00%	
Jong-Peir (John) Li \$ I	4	786,542		

\$ - Financial Expert (2) I - Industry Expert (2)

CLAWBACK & MALUS

No clawback or malus provisions have been identified.



NON-EXECUTIVE DIRECTOR PAY

NON-EXECUTIVE EQUITY

Director	Tenure (Years)	Shares Held
Chi Chia Hsieh	6	494,397
Chi-Te Chen	1	67,906
Chi-Wen Chang \$	N/A (Resigned)	3,376,895
Chin Jen Sheng	N/A (Resigned)	2,100
Kung Yi Koo	4	561,815
Ling Tai (Lynette) Chou \$	4	200,001
Nan-Chou Lin	N/A (Resigned)	2,897,442
Tung Sheng (Eric) Wu	N/A (Resigned)	74,686

\$ - Financial Expert (2)

NON-EXECUTIVE PAY TABLES

There are insufficient disclosures available to present non-executive pay data.

CONTROVERSIES & EVENTS

No major relevant controversies have been uncovered.



OWNERSHIP & CONTROL

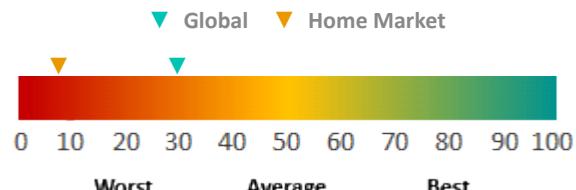
The company's ownership structure and shareholder rights at Taiwan Cement fall within the average scoring relative to global peers.

0-10 Score	Global Percentile Rank	Home Market Percentile Rank
5.5	31st (Average)	9th (Below Average)

KEY METRICS SCORING

	Deduction
DIRECTOR ELECTIONS	
Flag Annual Director Elections	-0.10
Flag Majority Voting	-0.10
OWNERSHIP STRUCTURE	
Flag Cross Shareholdings	-1.00
SHAREHOLDER RIGHTS	
Flag Say on Pay Policy	-0.10

OWNERSHIP & CONTROL PERFORMANCE VS.



CORPORATE STRUCTURE

Public Company

CAPITAL STRUCTURE

Capital Type	Votes Per Share	Shares Outstanding
ordinary shares	1.0	6,116,173,002
preferred shares	0.0	200,000,000

Ordinary shares and Preferred shares

AR 2021 page 73/383

OWNERSHIP STRUCTURE

OWNERSHIP CATEGORIES

- Principal Shareholder
- Family Firm

NOTABLE SHAREHOLDERS

Koo Family and Chang Family - 10.95% (Chinatrust Investment Co., Ltd. 11%
-3.95% via Tian-Yi Huo - 0.14% Chia Hsin Cement Corporation-3.56% via
Kang-Lung Chang, Chia Hsin International -1.74 via Kang-Lung Chang
International CSRC Investment Holdings Co - 1.69%, via Kung-Yi Koo - 0.01)



CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

5%+ shareholders - Aggregate Voting Power	0%
Insider Voting Power	11%

We note that despite being classified as a family firm/founder firm, the company does not have a controlling shareholder. The company does not have a special capital structure, thus one vote right is afforded per common share. This principle of 'one share one vote' helps align economic and voting power and ensures that no class of shareholders has more voting power than economic exposure.

CROSS SHAREHOLDINGS

The company has been flagged for being involved in a series of cross-shareholdings with other (related or unrelated) companies. Cross shareholdings can lead to double counting, whereby the equity of each company is counted twice when determining value. Cross-shareholdings are rare in the Taiwan markets, with only 9% of the companies being flagged for this.

Chinatrust Investment Co., Ltd. holds 3.95 % of Taiwan Cement Corp., Taiwan Cement Corp holds 9.36% of Chinatrust Investment Co., Ltd.

Chia Hsin Cement Corp. holds 3.56% of Taiwan Cement Corp, Taiwan Cement Corp holds 3.54% of Chia Hsin Cement Corp.

CROSS-SHAREHOLDINGS

	Percentage of Voting Rights	Value of Cross Holding in Other Party As % of Market Cap
Chia Hsin Cement Corp. holds 3.56% of the total voting rights in 'Taiwan Cement Corp.' as part of a cross-shareholding arrangement. Some 1.97% of the market cap of 'Taiwan Cement Corp.' is invested in shares of Chia Hsin Cement Corp. as part of this arrangement.	Votes Held by Chia Hsin Cement Corp. Voting Rights: 3.6 % Others: 96.4 %	Investment by Chia Hsin Cement Corp. Market Cap: 2.0 % Others: 98.0 %
Chinatrust Investment Co., Ltd. holds 3.95% of the total voting rights in 'Taiwan Cement Corp.' as part of a cross-shareholding arrangement. Some 16.86% of the market cap of 'Taiwan Cement Corp.' is invested in shares of Chinatrust Investment Co., Ltd. as part of this arrangement.	Votes Held by Chinatrust Investment Co., Ltd. Voting Rights: 4.0 % Others: 96.1 %	Investment by Chinatrust Investment Co., Ltd. Market Cap: 16.9 % Others: 83.1 %

FAMILY FIRM

Koo family collectively holds 10.95% of company shares through direct and indirect holdings

TAKEOVER PROVISIONS

Fair Price Provision	Mandatory Bid Provision	Mandatory Bid Ownership Threshold
Yes	Yes	20.0
% of Votes to Approve a Merger		
67%		



GOVERNING DOCUMENTS

MAJORITY REQUIREMENTS

	Bylaws	Charter
Default percentage of votes required to amend a provision		67%

The following matters shall be passed by a special resolution at the general meeting of shareholders. Amendment of the company's articles of association

A special resolution made by the shareholders' general meeting shall be passed by more than 2/3 of the voting rights held by the shareholders (including shareholders' proxies) present at the shareholders' general meeting

SHAREHOLDER RIGHTS

There may be governance risks for investors in relation to shareholder rights and management-controlled takeover defense mechanisms at Taiwan Cement including:

- Limits on the right of shareholders to take action by written consent

SHAREHOLDER MEETINGS & RESOLUTIONS

	Call Special Meeting	Requisition a Resolution at AGM	Act by Written Consent
Percentage of shares required	3%		100%

RESTRICTIONS ON LEGAL ACTION BY SHAREHOLDERS

No exclusive forum provision has been identified.

SAY ON PAY

Despite a global trend towards providing shareholders with the ability to review and approve executive pay practices, the company does not operate in a market which requires regular 'say on pay' votes nor has it extended this right to shareholders.

DIRECTOR ELECTIONS

BOARD RE-ELECTION PROVISIONS

Not all board members are subject to annual re-election. While considered by some governance experts as a means of ensuring board continuity, a classified board structure may limit the ability of shareholders to hold directors accountable and serve as a takeover defense.

Board Re-election Provisions	
Board Re-election Frequency (Years)	3
% of Board subject to re-election	100%



DIRECTOR ELECTION STANDARD

Director Election Rules	
Vote Standard	Plurality
Immediate Binding Resignation	Yes

In the election of directors of this Company, candidates who acquire more votes should win the seats of directors. If two or more persons acquire the same number of votes and the number of such persons exceeds the specified seats available, such persons acquiring the same votes shall draw lots to decide who should win the seats available, and the Chairman shall draw lots on behalf of the candidate who is not present



ACCOUNTING

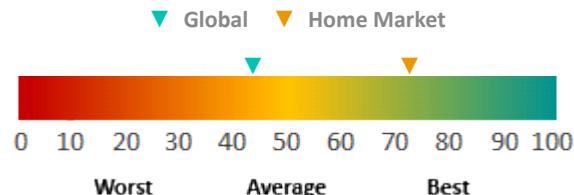
Based on the company's disclosures and other public information, accounting and financial reporting practices at Taiwan Cement appear to be generally appropriate and effective relative to global peers.

0-10 Score	Global Percentile Rank	Home Market Percentile Rank
9.4	45th (Average)	74th (Average)

KEY METRICS SCORING

Deduction	
AUDITOR INDEPENDENCE	
Auditor Tenure	-0.10

ACCOUNTING PERFORMANCE VS.



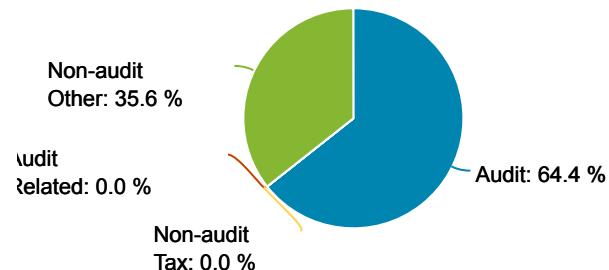
EXTERNAL AUDITORS

Type	Since	Firm	Most Recent Fiscal Year End Signed Off
Primary		Deloitte & Touche	2021

AUDITOR FEES

Fees paid to: Deloitte & Touche (Primary)

Fee	Dec 31, 2021 (TWD)	Dec 31, 2020 (TWD)	Dec 31, 2019 (TWD)
Audit	34,652,000	24,655,000	24,425,000
Audit Related			
Total Audit + Audit Related	34,652,000	24,655,000	24,425,000
Tax Compliance/Advice			
Other Non-audit Services	19,185,000	11,767,000	8,269,000
Total Non-audit Fees	19,185,000	11,767,000	8,269,000
Total Fees	53,837,000	36,422,000	32,694,000





CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

AUDITOR'S REPORT

	Dec 31, 2021	Dec 31, 2020	Dec 31, 2019
Report Disclosed	Yes	Yes	Yes
Opinion	Unqualified Opinion	Unqualified Opinion	Unqualified Opinion
Emphasis of Matter	No	No	No

CONTROVERSIES & EVENTS

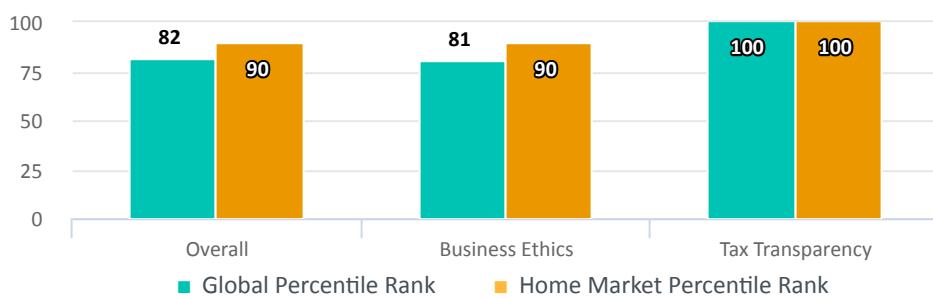
No major relevant controversies have been uncovered.



Corporate Behavior

0-10 Score	Change (since rating)	Quartile	As of
7.3	▲ 0.7	••••	Jun 12, 2022

CORPORATE BEHAVIOR THEME AND KEY ISSUE RANKINGS



METHODOLOGY NOTE

This theme evaluates the extent to which companies may face ethics issues such as fraud, executive misconduct, corruption scandals, money laundering, anti-trust violations, or tax-related controversies.

* [For symbols and terms used in this report, refer to the Glossary section at the end of the report]

KEY AREAS OF CONCERN*

SCORING DEDUCTIONS

Business Ethics Policies & Practices	(-0.70)
Employee Training on Ethical Standards	
Business Ethics Risk & Controversies	(-2.00)
Corruption Risk Exposure & Controversies	

*Key areas of concern include flagged key metrics that represent the largest scoring deductions. Please review the full report to see a complete set of flagged key metrics.

CORPORATE BEHAVIOR SCORE HISTORY





CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

BUSINESS ETHICS

KEY METRICS SCORING

	Deduction
BUSINESS ETHICS POLICIES & PRACTICES	-0.70
Employee Training on Ethical Standards	-0.70
BUSINESS ETHICS RISK & CONTROVERSIES	-2.00
Corruption Risk Exposure & Controversies	-2.00

Note: Business Ethics Policies & Practices deductions as well as Business Ethics Risk & Controversies are capped at a maximum of -7.0. Cumulative deductions are capped at 10.

0-10 Score	Change (since rating)	Global Percentile Rank	Home Market Percentile Rank
7.2	▲ 0.7	81 st (Above Average)	90 th (Above Average)

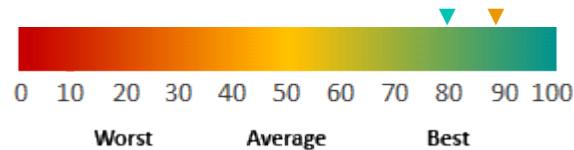
METHODOLOGY NOTE

Companies are evaluated on their oversight and management of business ethics issues such as fraud, executive misconduct, corrupt practices, money laundering, or anti-trust violations.

*[For symbols and terms used in this report, refer to the Glossary section at the end of the report]

BUSINESS ETHICS VS.

▼ Global ▼ Home Market



BUSINESS ETHICS POLICIES & PRACTICES

Indicators	Company Practice	Best Practice	Deduction
Oversight for Ethics Issues	C-suite or Executive committee	Board-level committee or C-suite or Executive committee	0.00
Bribery and Anti-Corruption Policy	Detailed formal policy on bribery and anti-corruption	Detailed formal policy on bribery and anti-corruption	0.00
Regular Audits of Ethical Standards	Audits of all operations at least once every three years	Audits of all operations at least once every three years	0.00
Whistleblower Protection	Policy provides whistleblowers with protection from retaliation	Policy provides whistleblowers with protection from retaliation	0.00
Employee Training on Ethical Standards	Programs covering all permanent employees (excluding part-time and contractors)	Programs covering all employees (including part-time) and contractors	-0.70
Anti-Corruption Policy for Suppliers	NA	All suppliers are required to have anti-corruption policies and programs to verify compliance	0.00
Policies Related to Anti-Money Laundering	NA	Policy and implementation strategy articulated	0.00

*Business Ethics Policies & Practices deductions are capped at a maximum of -7.0.



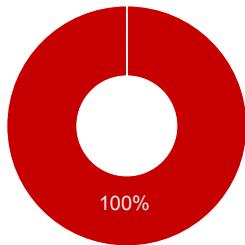
CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

CORRUPTION RISK EXPOSURE

Exposure to: Regulatory risks or lost market access due to corruption scandals or political and social instability
Business Types : Percentage of operations in business segments perceived most likely to pay or receive bribes

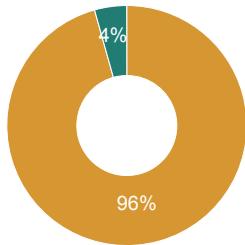
■ High Risk ■ Medium Risk ■ Low Risk



- Cement, Power generation
- No exposure to medium risk segments
- No exposure to low risk segments

Source: Bribe Payers Index (Transparency International); State Capture Index (Transparency International); Refinitiv; MSCI ESG Research; company disclosure

Business Locations : Percentage of operations in countries with high/moderate/low level of corruption and political instability, violence or terrorism



- No operations in markets with high risks
- China, Taiwan
- Europe

Source: Corruption Perceptions Index (Transparency International); World Governance Indicators (World Bank); Refinitiv; MSCI ESG Research; company disclosure

CORRUPTION RISK EXPOSURE SCORING DEDUCTION KEY

% of operations in medium and high risk geographies	% of operations in high risk business segments	>=20% government ownership	<20% government ownership	No evidence of government ownership
20% or more	50% or more	-4.00	-2.60	-2.00
	Less than 50%	-1.20	-1.20	-1.20
Less than 20%	50% or more	-0.60	-0.60	-0.60
	Less than 50%	0.00	0.00	0.00

*The Corruption Risk and Controversies Deduction is based on the maximum of deductions from the corruption risk exposure and corruption controversies category listed below

BUSINESS ETHICS CONTROVERSIES

Controversy Cases

Category	Assessment	Headline	Status	Last Updated	Deduction
Business Ethics & Fraud	--	No ongoing controversies.	--	--	--
Anticompetitive Practices	Minor	China: CNY 300,000 SAMR penalty for the alleged failure to declare joint venture with OYAK	Concluded	September 2020	0.0
Corruption	--	No ongoing controversies.	--	--	--

*The maximum deductions from the Anticompetitive Practices and Business Ethics & Fraud categories are summed to arrive at the overall Business Ethics Controversies deduction, which is capped at a maximum of -7.0.



CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

TAX TRANSPARENCY

TAX GAP ASSESSMENT

Indicators

Tax Gap

Estimated Effective Tax Rate	23.4%
Estimated Corporate Income Tax Rate	23.0%
Estimated Tax Gap	(-0.4%)
Tax Gap Assessment	Low Gap

Revenue

Foreign Revenue	61.0%
-----------------	-------

Confidence

Confidence Level of Estimation	High
--------------------------------	------

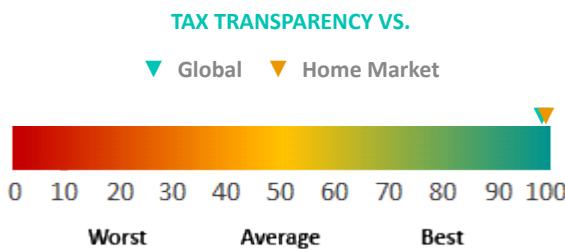
Involvement in Controversies

0-10 score	Change (since rating)	Global Percentile Rank	Home Market Percentile Rank
10.0	0.0	100th (Best In Class)	100th (Best In Class)

METHODOLOGY NOTE

Companies are evaluated on their estimated corporate tax gap (i.e. gap between estimated effective tax rate and estimated corporate income tax rate) and their involvement in tax-related controversies.

*[For symbols and terms used in this report, refer to the Glossary section at the end of the report]



TAX CONTROVERSIES

Controversy Cases

Category	Assessment	Headline	Status	Last Updated	Deduction
Tax Transparency	--	No ongoing controversies.	--	--	--

TAX CONTROVERSIES SCORING DEDUCTION KEY

Involvement in tax controversies	Estimated tax gap	Tax gap assessment	Deduction
Yes	Below 5%	Low	-0.80
	5-10%	Moderate	-1.40
	Above 10%	High	-2.00
No	Below 5%	Low	0.00
	5-10%	Moderate	0.00
	Above 10%	High	0.00

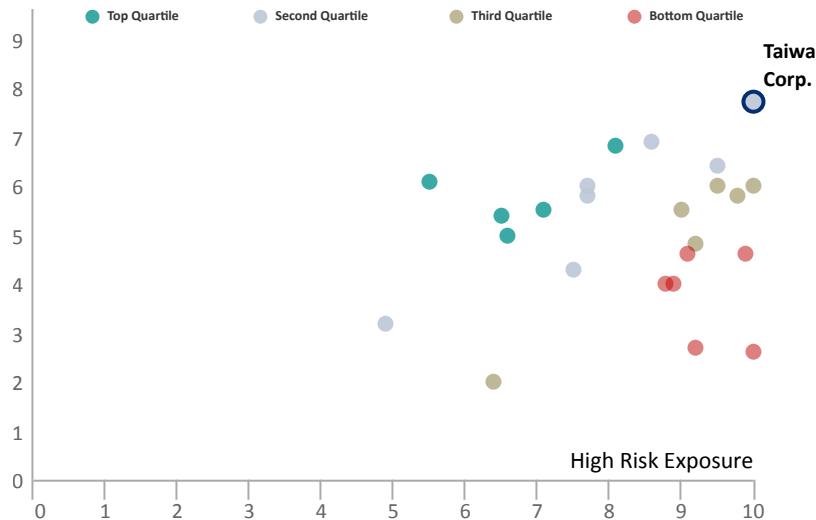
Tax related controversies are not considered for companies in Real Estate Management services or Mortgage REITs industries. Tax gap assessment is effectively low for companies with less than 5% of total revenue categorized as foreign.



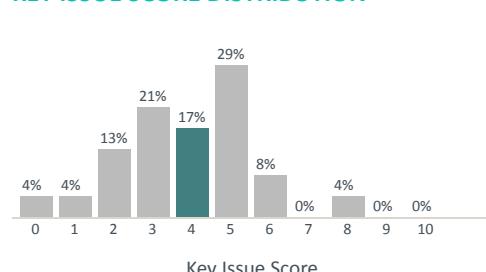
Carbon Emissions

Score	Change (since rating)	Quartile	Weight	As of
4.7	0.0	•••	20.0%	Dec 17, 2021

Strong Risk Management



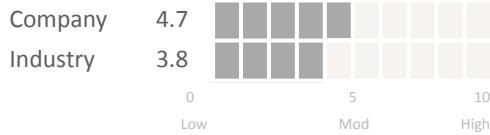
KEY ISSUE SCORE DISTRIBUTION *



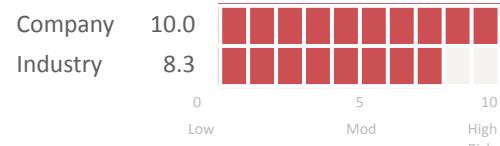
TOP 5 INDUSTRY LEADERS

The Siam Cement Public Company Limited	7.6
JAMES HARDIE INDUSTRIES PUBLIC LIMITED COMPANY	5.9
CEMEX, S.A.B. de C.V.	5.7
CRH PUBLIC LIMITED COMPANY	5.4
GRASIM INDUSTRIES LTD	5.4

KEY ISSUE ASSESSMENT



RISK EXPOSURE ASSESSMENT



RISK MANAGEMENT ASSESSMENT



Drivers of Risk Exposure

Drivers of Risk Management

Business Types

Practices Score



Business Locations

Performance Score



BOTTOM 5 INDUSTRY LAGGARDS

Huaxin Cement Co., Ltd.	2.2
PT Semen Indonesia (Persero) Tbk	2.1
CHINA RESOURCES CEMENT HOLDINGS LIMITED	1.7
China National Building Material Company Limited	0.5
TANGSHAN JIDONG CEMENT CO.,LTD.	0.0

METHODOLOGY NOTE

Companies are evaluated on the carbon intensity of their operations and their efforts to manage climate-related risks and opportunities.



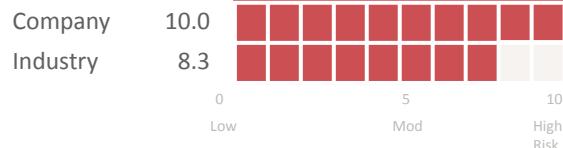
CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

* [For symbols and terms used in this report, refer to the Glossary section at the end of the report]

EXPOSURE

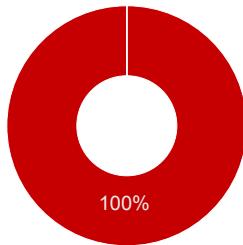
RISK EXPOSURE ASSESSMENT



Key Drivers of Risk Exposure

Exposure to: Risks of having to pay increased compliance costs tied to carbon emissions regulations

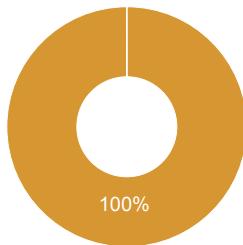
Business Types : Percentage of operations in business segments with high/moderate/low carbon intensity



- Cement, Power generation
- No exposure to medium risk segments
- No exposure to low risk segments

Source: IERS' Comprehensive Environmental Data Archive (CEDA); Air Emissions Accounts (Eurostat); Refinitiv; MSCI ESG Research; company disclosure

Business Locations : Percentage of operations in countries with strengthening or pending carbon emissions regulation

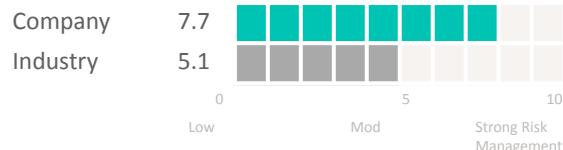


- No operations in markets with high risks
- Europe, China, Taiwan
- No operations in markets with low risks

Source: MSCI ESG Research; Refinitiv; company disclosure

MANAGEMENT

RISK MANAGEMENT ASSESSMENT





Description	Company Practice	Best Practice	Practices Score ²
Targets			
Aggressiveness of the company's reduction target in the context of its current performance	Aggressive target with a low base	Aggressive target with a low base	- LOW MID TOP
Carbon Improvement Targets			
Baseline Year	Target Year	Target Description	Target Reduction (%)
2016	2025	Reduce 11% of Scope 1 carbon emission intensity in Taiwan by 2025	11.00%
2016	2050	Carbon neutral concrete products by 2050	100.00%
2016	2025	Reduce 32% of Scope 2 carbon emission intensity in Taiwan by 2025	32.00%
2016	2030	Reduce 31% of carbon emission intensity in Taiwan by 2030	31.00%
2016	2030	Reduce 20% of carbon emission intensity in Mainland China by 2030	20.00%
2016	2020	Reduce energy consumption by over 5% of the 2016-2020 accumulative consumption in 2021	5.00%
2016	2021	Reduce carbon emission intensity by 2% of the 2016-2020 accumulative average in 2021	2.00%
2013	2030	Reduce emissions by 30% by 2030.	30.00%

Mitigation

Strength of Greenhouse Gas Mitigation Strategy (0-10 Score, 0=worst, 10=best) 7.00

Programs or actions to reduce the emissions intensity of core operations

Use of cleaner sources of energy	Some efforts	Aggressive efforts	- LOW MID TOP
Capture GHG emissions	Aggressive efforts	Aggressive efforts	- LOW MID TOP
Energy consumption management and operational efficiency enhancements	Some efforts	Aggressive efforts	- LOW MID TOP
CDP disclosure	Yes	Yes	- LOW TOP

Performance

Carbon Emissions Performance Relative to Peers (0-10 Score, 0=worst, 10=best) 6.00

GHG Emissions - metric tons CO2e

Year	Scope 1 Disclosed	Scope 1 Estimate Key	Scope 2 Disclosed	Scope 2 Estimate Key	Scope 1+2 Disclosed	Scope 3 (upstream)	Scope 3 (downstream)	Scope 3 (undefined)	Scope 1 Estimated	Scope 2 Estimated	Scope 1+2 Estimated	Scope 1+2 Estimate Key	GHG Emissions Details
2020	4,411,086.0	Reported	202,312.0	Reported	4,613,398.0	22,427.0						Reported	
2019	4,267,805.0	Reported	230,040.0	Reported	4,497,845.0	21,083.0						Reported	
2018	4,230,680.0	Reported	255,802.0	Reported	4,486,482.0	15,041.0						Reported	
2017	4,144,669.0	Reported	241,691.0	Reported	4,386,360.0	8,873.0						Reported	



CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

Year	Scope 1 Disclosed	Scope 1 Estimate Key	Scope 2 Disclosed	Scope 2 Estimate Key	Scope 1+2 Disclosed	Scope 3 (upstream)	Scope 3 (downstream)	Scope 3 (undefined)	Scope 1 Estimated	Scope 2 Estimated	Scope 1+2 Estimated	Scope 1+2 Estimate Key	GHG Emissions Details
2016	4,396,724.0	Reported	253,768.0	Reported	4,650,492.0								Reported
2015	4,614,890.0	Reported	281,352.0	Reported	4,896,242.0								Reported
2014	5,097,453.0	Reported	284,379.0	Reported	5,381,832.0								Reported
2013	6,545,197.0	Reported	306,790.0	Reported	6,851,987.0								Reported
2012		E.CSI		E.CSI					6,318,540.0	351,160.0	6,669,700.0	E.CSI	April 2018 Estimations
2011		E.CSI		E.CSI					6,012,913.0	334,174.0	6,347,087.0	E.CSI	April 2018 Estimations
2010		E.CSI		E.CSI					5,594,964.0	310,946.0	5,905,910.0	E.CSI	April 2018 Estimations
2009		E.CSI		E.CSI					4,169,956.0	231,750.0	4,401,706.0	E.CSI	April 2018 Estimations
2008		E.CSI		E.CSI					3,674,763.0	204,229.0	3,878,992.0	E.CSI	April 2018 Estimations

GHG Emissions Intensity - metric tons CO2e / USD million sales

Year	GHG Intensity	GHG Intensity Details	GHG Intensity - Reported	GHG Intensity - Reported Details
2020	1,133.40		0.81	tons of CO2e per metric ton of cementitious material
2019	1,098.10			
2018	1,106.80			
2017	1,325.70			
2016	1,673.40			
2015	1,715.90			
2014	1,437.30			
2013	1,760.70			
2012	1,622.20			
2011	1,622.20			
2010	1,622.20			
2009	1,622.20			
2008	1,622.20			

Energy Consumption

Year	Total energy consumption (reported)	Total energy consumption (MWh)	Energy intensity (reported)	Reported intensity details	Total energy consumption intensity	Energy consumption details
2020	4,944,024.17	4,944,024.17			1,214.66	Energy Consumption of Cement Plants
2019	4,951,266.39	4,951,266.39			1,208.83	Annual energy consumption (plants and HQ): coal, diesel and electricity
2018	4,860,081.67	4,860,081.67			1,198.96	Annual energy consumption (plants and HQ): coal, diesel and electricity
2017	5,231,866.67	5,231,866.67			1,581.28	Annual energy consumption (plants and HQ): coal, diesel and electricity
2016	5,574,619.73	5,574,619.73			2,005.98	Annual energy consumption (plants and HQ): coal, diesel and electricity



CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

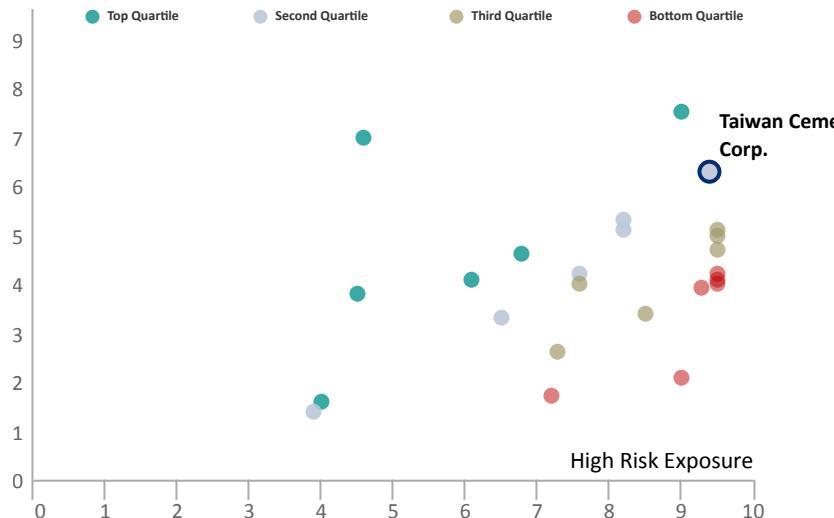
Year	Total energy consumption (reported)	Total energy consumption (MWh)	Energy intensity (reported)	Reported intensity details	Total energy consumption intensity	Energy consumption details
2015	9,524,741.95	9,524,741.95			3,337.96	Annual energy consumption (plants and HQ): coal, diesel and electricity
2014	10,290,800.01	10,290,800.01			2,748.39	Annual Energy Consumption
2013	12,603,016.40	12,603,016.40			3,238.48	Annual Energy Consumption



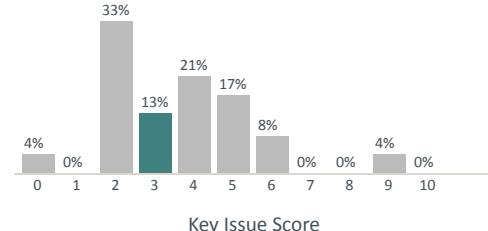
Toxic Emissions & Waste

Score	Change (since rating)	Quartile	Weight	As of
3.9	0.0	•••	19.0%	Dec 12, 2021

Strong Risk Management



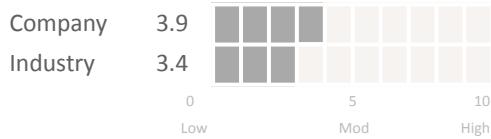
KEY ISSUE SCORE DISTRIBUTION *



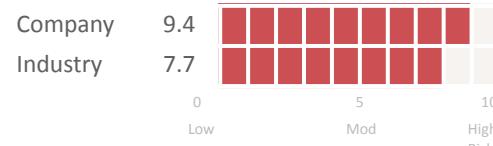
TOP 5 INDUSTRY LEADERS

CRH PUBLIC LIMITED COMPANY	9.4
BBMG Corporation	6.3
CHINA RESOURCES CEMENT HOLDINGS LIMITED	5.5
HeidelbergCement AG	5.0
CHINA JUSHI CO., LTD	4.8

KEY ISSUE ASSESSMENT

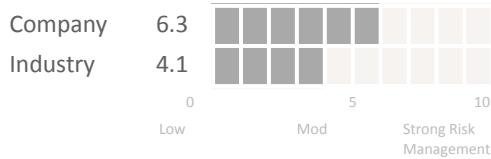


RISK EXPOSURE ASSESSMENT



Drivers of Risk Exposure

RISK MANAGEMENT ASSESSMENT



Drivers of Risk Management

Business Types



Practices Score



Performance Score



BOTTOM 5 INDUSTRY LAGGARDS

ACC LIMITED	1.6
PT Semen Indonesia (Persero) Tbk	1.6
JAMES HARDIE INDUSTRIES PUBLIC LIMITED COMPANY	1.5
ULTRATECH CEMENT LIMITED	1.5
Asia Cement Corporation	0.1

METHODOLOGY NOTE

Companies are evaluated on the potential environmental contamination and toxic or carcinogenic emissions arising from their operations and the strength of their environmental management systems.

* [For symbols and terms used in this report, refer to the Glossary section at the end of the report]

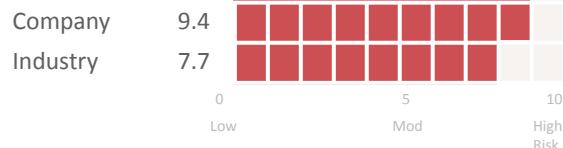


Controversy Deduction



EXPOSURE

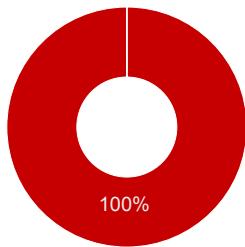
RISK EXPOSURE ASSESSMENT



Key Drivers of Risk Exposure

Exposure to: Risk of increased compliance costs and liabilities associated with damaging health, property; risk of losing access to markets due to community opposition or heightened regulatory hurdles

Business Types : This represents the portion of the company's revenues derived from lines of business that are High Risk (typically generate large amounts of toxic emissions), Medium Risk (typically generate moderate amounts of toxic emissions), and Low Risk (typically generate low amounts of toxic emissions).

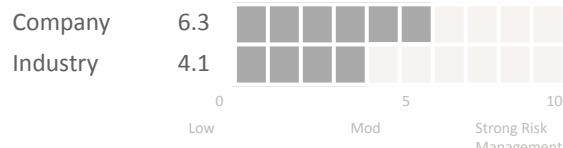


- Cement, Power generation
- No exposure to medium risk segments
- No exposure to low risk segments

Source: Toxics Release Inventory (US Environmental Protection Agency); National Emissions Inventory (US Environmental Protection Agency); Risk-Screening Environmental Indicators (US Environmental Protection Agency); US Economic Census; Refinitiv; MSCI ESG Research; company disclosure

MANAGEMENT

RISK MANAGEMENT ASSESSMENT





CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

Description	Company Practice	Best Practice	Practices Score ²
Governance and Strategy			
Existence of Environmental Management System (EMS)	ISO 14001 or equivalent	ISO 14001 or equivalent	- LOW MID TOP
Percentage of sites with hazardous waste guidance that achieved HAZWOPER certification or follow ISO 14001 for waste management	100.00%		
Disclosure around the number or percentage of sites with HAZWOPER or ISO 14001 certification	Disclosed	Disclosed	- LOW MID TOP
Evidence of regular environmental impact audits	Yes	Yes	- LOW TOP
Evidence of audits across all locations of operations	Yes	Yes	- LOW TOP
Evidence of annual compliance audits	Yes	Yes	- LOW TOP

Targets

Aggressiveness of Toxic Emissions Reduction Target (0-10 Score, 0=worst, 10=best)	8		
Demonstrated track record of achieving its toxic emissions targets	Met previous targets	Met previous targets	- LOW MID TOP

Toxic Emissions and Waste Reduction Targets

Baseline Year	Target Year	Target Description	Target Reduction (%)
	2030	Assist in processing 157 tonnes of waste by 2030.	
2016	2025	Reduce SOx emissions by 30% vs. 2016 baseline.	30.00%
2016	2025	Reduce NOx emissions by 50% vs. 2016 baseline.	50.00%
2016	2025	Reduce TSP (total suspended particles) emissions by 30% vs. 2016 baseline.	30.00%
2013	2030	Lower 2030 air pollution emissions by 20% compared to the base year.	20.00%

Performance

Toxic Releases Performance Relative to Peers (0-10 Score, 0=worst, 10=best)	5.00
---	------

Air Emissions: NOx Performance

3 Year Average Intensity	1.58
Average Annual % Change in Intensity	-10.30%



CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

Air Emissions: NOx Performance

Year	NOx Emissions	NOx Emissions Intensity (tons/ USD million sales)
2020	6,164	1.51
2019	6,388	1.56
2018	6,744	1.66
2017	7,035	2.13
2016	7,331	2.64
2015	7,896	2.77

Air Emissions: SOx Performance

3 Year Average Intensity	0.02
Average Annual % Change in Intensity	3.87%

Air Emissions: SOx Performance

Year	SOx Emissions	SOx Emissions Intensity (tons/ USD million sales)
2020	106	0.03
2019	79	0.02
2018	85	0.02
2017	82	0.02
2016	111	0.04
2015	117	0.04

Air Emissions: Particulate Matter Performance

3 Year Average Intensity	0.10
Average Annual % Change in Intensity	-27.16%

Air Emissions: Particulate Matter Performance

Year	Quantities	Intensity
2020	249	0.06
2019	305	0.07
2018	643	0.16
2017	587	0.18
2016	433	0.16
2015	655	0.23



CCC | B | BB | **BBB** | A | AA | AAA

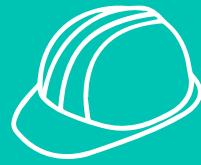
RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

CONTROVERSIES

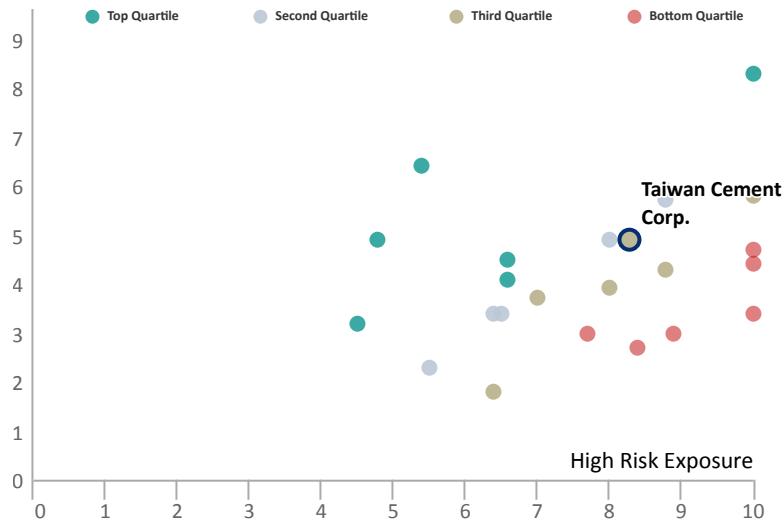
All controversies are assessed as part of the annual review of a company's ESG rating. MSCI ESG Research tracks controversies for all companies on a regular basis. There is no evidence of the Taiwan Cement's current involvement in prominent controversial events or alleged misconduct.



Health & Safety

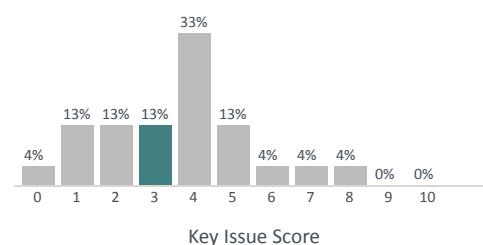


Strong Risk Management



Score	Change (since rating)	Quartile	Weight	As of
3.6	0.0	••	14.0%	Dec 12, 2021

KEY ISSUE SCORE DISTRIBUTION *



TOP 5 INDUSTRY LEADERS

CRH PUBLIC LIMITED COMPANY	8.0
The Siam Cement Public Company Limited	7.1
CHINA JUSHI CO., LTD	5.7
ULTRATECH CEMENT LIMITED	5.3
CEMEX, S.A.B. de C.V.	4.9

BOTTOM 5 INDUSTRY LAGGARDS

AMBUJA CEMENTS LIMITED	1.7
ACC LIMITED	1.4
Asia Cement Corporation	1.3
TANGSHAN JIDONG CEMENT CO.,LTD.	1.1
SHREE CEMENT LIMITED	0.4

METHODOLOGY NOTE

Companies are evaluated on their management of workplace safety and the workplace safety standards in the industries and regions in which they operate.

* [For symbols and terms used in this report, refer to the Glossary section at the end of the report]



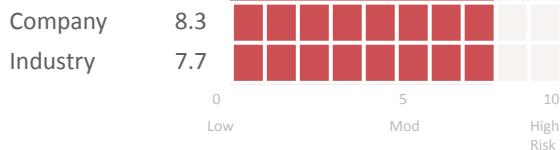
CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022



EXPOSURE

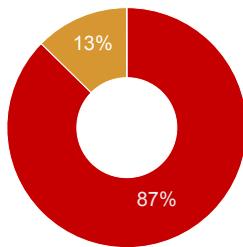
RISK EXPOSURE ASSESSMENT



Key Drivers of Risk Exposure

Exposure to: Risk of accidents that can lead to production disruptions, litigation, and liabilities

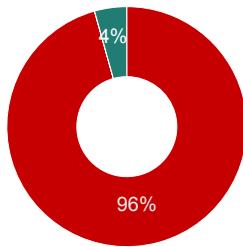
Business Types : Percentage of operations in business segments with high/moderate/low level of fatalities and industrial injuries



- Cement
- Power generation
- No exposure to low risk segments

Source: US Occupational Health & Safety Administration (OSHA); UK Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR); US Bureau of Labor Statistics; Refinitiv; MSCI ESG Research; company disclosure

Business Locations : Percentage of operations in countries with high/moderate/low employee fatality rates (total fatalities per 100,000 employees)

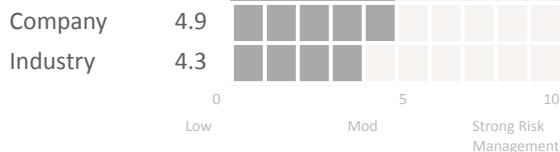


- China, Taiwan
- No operations in markets with medium risks
- Europe

Source: International Labour Organization; Refinitiv; MSCI ESG Research; company disclosure

MANAGEMENT

RISK MANAGEMENT ASSESSMENT





CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

Description	Company Practice	Best Practice	Practices Score ²		
Governance and Strategy					
Percentage of the company's health & safety system certified to OHSAS 18001	100.00%				
Evidence of Recognized Certification	Yes	Yes	-	LOW	TOP
What executive body is responsible for H&S strategy and performance?					
H&S strategy and performance is managed by Sustainability Committee, H&S task force or risk officer	Yes	Yes	-	LOW	TOP
Health & safety policy					
H&S policy is group-wide	Yes	Yes	-	LOW	TOP
H&S policy applies to contractors	Yes	Yes	-	LOW	TOP
Targets					
Target to improve H&S performance	Non-zero target (contractors included)	Non-zero target (contractors included)	-	LOW	MID
Other H&S Metric					
Year (YYYY)	Other Health & Safety Metric Description	Other Health & Safety Metric Value	Details		
2020	Lost Day Rate (LDR)	5.08			
2019	Lost Day Rate (LDR)	17.37			
2018	Lost Day Rate (LDR)	4.40			
2017	Lost Day Rate (LDR)	6.23			
Operations					
Performance on Health & Safety Metrics Relative to Peers (0-10 Score, 0=worst, 10=best)					5.00
Lost Time Incident Rate					
Year	Lost Time Incident Rate	Lost Time Incident Rate (per million hours)	Lost Time Incident Rate Unit	Details	
2019	0.24	1.20	per 200,000 hours	only for Taiwan employees	
2018	0.40	2.00	per 200,000 hours	only for Taiwan employees	
2017	0.35	1.75	per 200,000 hours	only for Taiwan employees	



Total Recordable Injury Rate

Year	Total Recordable Injury Rate	Total Recordable Injury Unit	Total Recordable Injury Rate (per million hours)	Details
2014	0.11	per 200,000 hours	0.55	only for Taiwan employees
2013	0.76	per 200,000 hours	3.80	only for Taiwan employees
2012	0.10	per 200,000 hours	0.50	only for Taiwan employees

Fatalities

Year	Contractor Fatalities	Employee Fatalities	Fatalities	Details
2020			0	
2019			0	
2018			0	
2017			0	
2016			0	

CONTROVERSIES

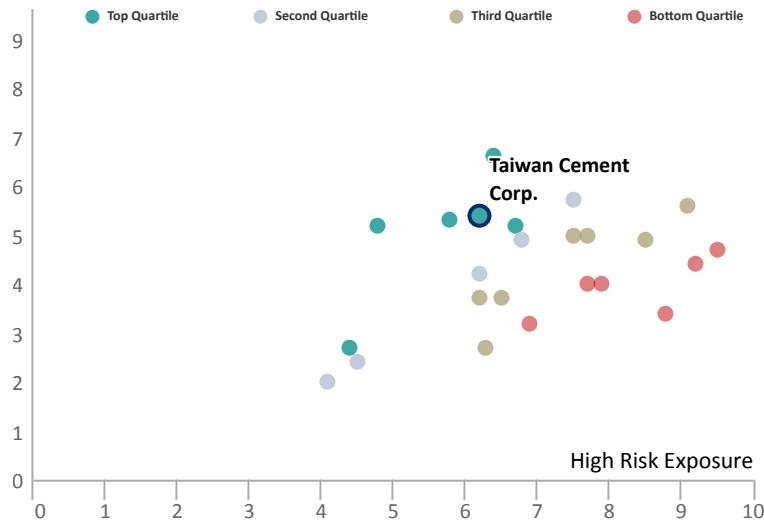
All controversies are assessed as part of the annual review of a company's ESG rating. MSCI ESG Research tracks controversies for all companies on a regular basis. There is no evidence of the Taiwan Cement's current involvement in prominent controversial events or alleged misconduct.



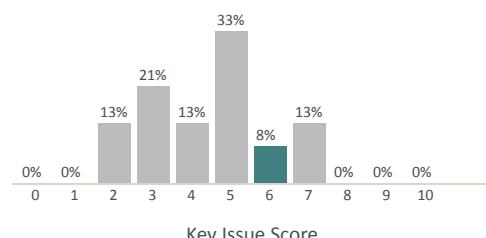
Labor Management

Score	Change (since rating)	Quartile	Weight	As of
6.2	▼ -0.1	••••	14.0%	Apr 25, 2022

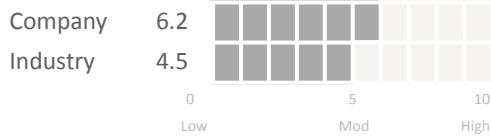
Strong Risk Management



KEY ISSUE SCORE DISTRIBUTION *



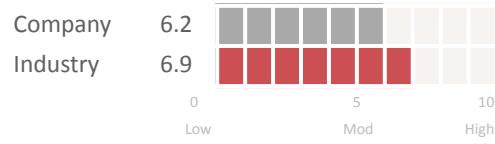
KEY ISSUE ASSESSMENT



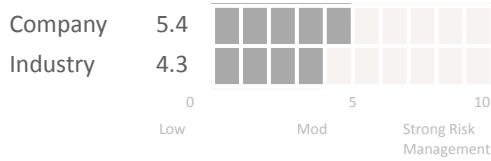
TOP 5 INDUSTRY LEADERS

The Siam Cement Public Company Limited	7.4
CHINA JUSHI CO., LTD	7.2
Asia Cement Corporation	6.5
Taiwan Cement Corp.	6.2
CHINA RESOURCES CEMENT HOLDINGS LIMITED	5.5

RISK EXPOSURE ASSESSMENT



RISK MANAGEMENT ASSESSMENT



Drivers of Risk Exposure

Drivers of Risk Management

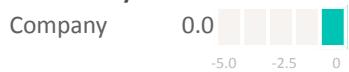
Business Types

Practices Score



Business Locations

Controversy Deduction



BOTTOM 5 INDUSTRY LAGGARDS

TANGSHAN JIDONG CEMENT CO.,LTD.	3.3
ACC LIMITED	3.1
China National Building Material Company Limited	2.2
Holcim AG	2.2
HeidelbergCement AG	1.6

METHODOLOGY NOTE

Companies are evaluated on the complexity of their workforce (size, labor intensity, and regions of operation), employee relations, strength of worker protections, and employee engagement efforts.



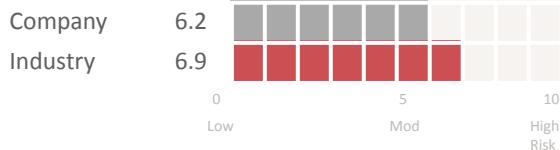
CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

* [For symbols and terms used in this report, refer to the Glossary section at the end of the report]

EXPOSURE

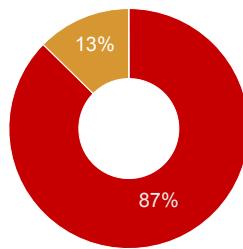
RISK EXPOSURE ASSESSMENT



Key Drivers of Risk Exposure

Exposure to: Risk of workflow disruptions due to labor unrest, or reduced productivity due to poor job satisfaction

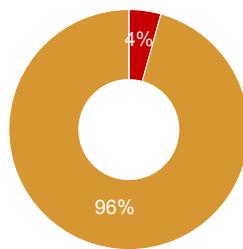
Business Types : Percentage of operations in business segments with high/moderate/low labor intensities, as measured by average sales per employee of industries



- Cement
- Power generation
- No exposure to low risk segments

Source: MSCI ESG Research; Refinitiv; company disclosure

Business Locations : Percentage of operations in countries with high/moderate/low likelihood of labor unrest (based on historic precedent)



- Europe
- China, Taiwan
- No operations in markets with low risks

Source: International Labour Organization; Refinitiv; MSCI ESG Research; company disclosure

Additional Drivers of Exposure

Collective bargaining negotiation expected in next 12 months:

Not Disclosed

Layoffs Events

Major Layoffs:

No

Size and Composition of Workforce

Number of employees:

10,858



CCC B BB BBB A AA AAA

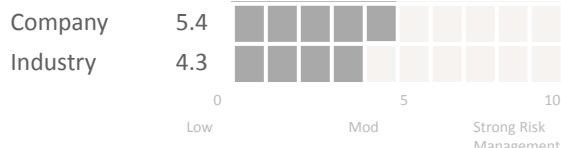
RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

Number of Employees

Year	Number of employees	Part time workers (%)	Contract or temporary workers (%)	Estimated Part time/contract %
2020	10,858			
2019	10,618			
2018	9,325			
2017	9,356			
2016	9,609			
2015	9,822			
2014	8,890			
2013	8,448			
2012	10,409			
2011	9,777			
2010	7,129			
2009	4,780			
2008	4,864			

MANAGEMENT

RISK MANAGEMENT ASSESSMENT



Description	Company Practice	Best Practice	Practices Score ²
Strategy			
Percentage of workforce covered by trade unions/ collective agreements	96.20%		
Estimate Key: Percentage of workforce covered by trade unions/ collective agreements	Reported	Reported	- LOW MID TOP
Evidence of collective agreements	Yes	Yes	- LOW TOP
Employee stock ownership plan (ESOP) or employee stock purchase plan (ESPP)	Only select number of employees eligible for ESOP and/or ESPP	Sector-leading number of employees eligible for ESOP and/or ESPP	- LOW MID TOP
Variable performance-based component to pay	Selective performance-based incentive pay for non-incentive officer staff	Strong performance-based incentive pay structure covers all employees	- LOW MID TOP
Non-compensation benefits including pension and retirement	Scope not determinable	Benefits cover all employees	- LOW MID TOP



CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

Performance

External recognition as employer of choice (last three years)	Not Disclosed
Company witnessed strikes / lock-outs in the last three years	No

Employee turnover

Year	Annual employee turnover (%)	Details
2020	4.10%	
2019	9.28%	
2018	11.03%	
2017		

Employee Productivity

Year	Profit per employee (USD '000)
2018	0

CONTROVERSIES

All controversies are assessed as part of the annual review of a company's ESG rating. MSCI ESG Research tracks controversies for all companies on a regular basis. There is no evidence of the Taiwan Cement's current involvement in prominent controversial events or alleged misconduct.



APPENDIX

CONTENTS

ISSUER COMMUNICATION

CONTROVERSIES DETAIL

ADDITIONAL CORPORATE GOVERNANCE CONTENT

KEY METRIC & SCORE CHANGES

CEO PAY CHARTS

SHAREHOLDER/MANAGEMENT PROPOSALS

GOVERNANCE STANDARDS

DIRECTOR PROFILES



ISSUER COMMUNICATION SUMMARY

COMPANY COMMUNICATION PAST 15 MONTHS

Direction	Method	Category	Research Product	Date
Outgoing	E-mail	Other	ESG Ratings	Jul 21, 2022
Outgoing	E-mail	Other	ESG Ratings	Jun 15, 2022
Outgoing	E-mail	Feedback Notice	ESG Ratings	Jun 07, 2022
Outgoing	E-mail	Feedback Notice	ESG Ratings	May 23, 2022
Outgoing	E-mail	Feedback Notice	ESG Ratings	May 12, 2022
Outgoing	E-mail	Other	ESG Ratings	Apr 06, 2022
Outgoing	E-mail	Other	ESG Ratings	Jan 14, 2022
Outgoing	E-mail	Updated ESG Rating	ESG Ratings	Dec 17, 2021
Outgoing	E-mail	Other	ESG Ratings	Dec 16, 2021
Incoming	Issuer Communication Portal	Data Review - Feedback Provided	ESG Ratings	Dec 02, 2021
Outgoing	Phone Call	Request for information	ESG Ratings	Dec 01, 2021
Incoming	E-mail	Request for information	ESG Ratings	Nov 11, 2021
Outgoing	E-mail	Data Review - Feedback Provided	ESG GovernanceMetrics	Oct 08, 2021
Incoming	E-mail	Data Review - Feedback Provided	ESG GovernanceMetrics	Oct 08, 2021
Outgoing	E-mail	Request for information	ESG Ratings	Sep 30, 2021
Incoming	E-mail	Request for information	ESG Ratings	Sep 28, 2021
Outgoing	E-mail	Feedback Notice	ESG Ratings	Sep 28, 2021
Incoming	Issuer Communication Portal	Data Review - Feedback Provided	ESG Ratings	Aug 25, 2021
Outgoing	E-mail	Data Review - Feedback Provided	ESG Ratings	Aug 24, 2021
Incoming	E-mail	Data Review - Feedback Provided	ESG Ratings	Aug 24, 2021
Incoming	Issuer Communication Portal	Data Review - Feedback Provided	ESG Ratings	Aug 23, 2021
Outgoing	E-mail	Engagement Process related	ESG Ratings	Aug 16, 2021
Outgoing	E-mail	Other	ESG Ratings	Aug 09, 2021
Outgoing	E-mail	Engagement Process related	ESG Ratings	Aug 04, 2021
Outgoing	E-mail	Other report clarification	ESG Ratings	Jun 22, 2021



CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

LEGEND

Direction	Category
Outgoing: MSCI ESG Research contacts issuer.	Data Review - Alert: Notification of pending annual update of ESG Rating, and invitation to engage MSCI.
Incoming: Query by corporate issuer.	Data Review - Report: MSCI ESG Research delivers report of updated ESG data
	Data Review - Feedback Provided: Feedback provided to MSCI ESG Research.
	Request for Information: Issuer inquiries; MSCI ESG Research queries.
	Published Report Sent: MSCI ESG Research delivers issuers' ESG product report that is posted to the MSCI ESG Manager platform.
	Other: Issuer notified of custom projects; Miscellaneous queries.



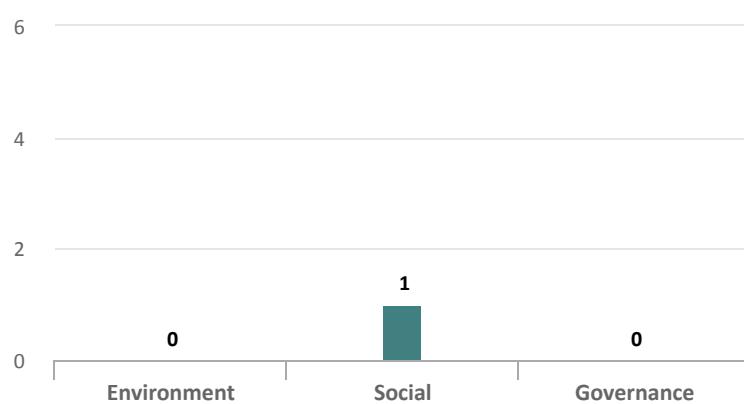
CONTROVERSIES DETAIL

Here you will find the narratives for all controversies relevant to the ESG Ratings issues covered for the company in addition to those controversies that do not map to the ESG Ratings issues.

CONTROVERSY CARD

	MOST SEVERE CONTROVERSY	CONTROVERSY COUNT
Environment		
Carbon Emissions	None	0
Toxic Emissions & Waste	None	0
Social		
Labor Management	None	0
Health & Safety	None	0
Governance		
Corporate Governance	None	0
Corporate Behavior	Minor	1

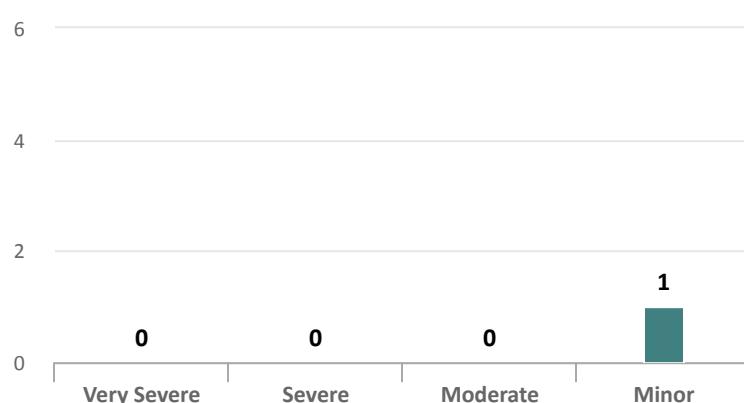
NUMBER OF CONTROVERSIES BY PILLAR



CONTROVERSIES

- **Very Severe:** Indicates an action by a company that results in a very large impact on society and/or the environment.
- **Severe:** Indicates an action by a company that results in a large impact on society and/or the environment.
- **Moderate:** Indicates an action by a company that results in a moderate impact on society and/or the environment.
- **Minor:** Indicates an action by a company that results in a low impact on society and/or the environment.
- **None:** There is no evidence that a company is involved in any controversy.

NUMBER OF CONTROVERSIES BY ASSESSMENT





KEY METRIC & SCORE CHANGES

ALL KEY METRIC & SCORE CHANGES (SINCE MAY 2021)

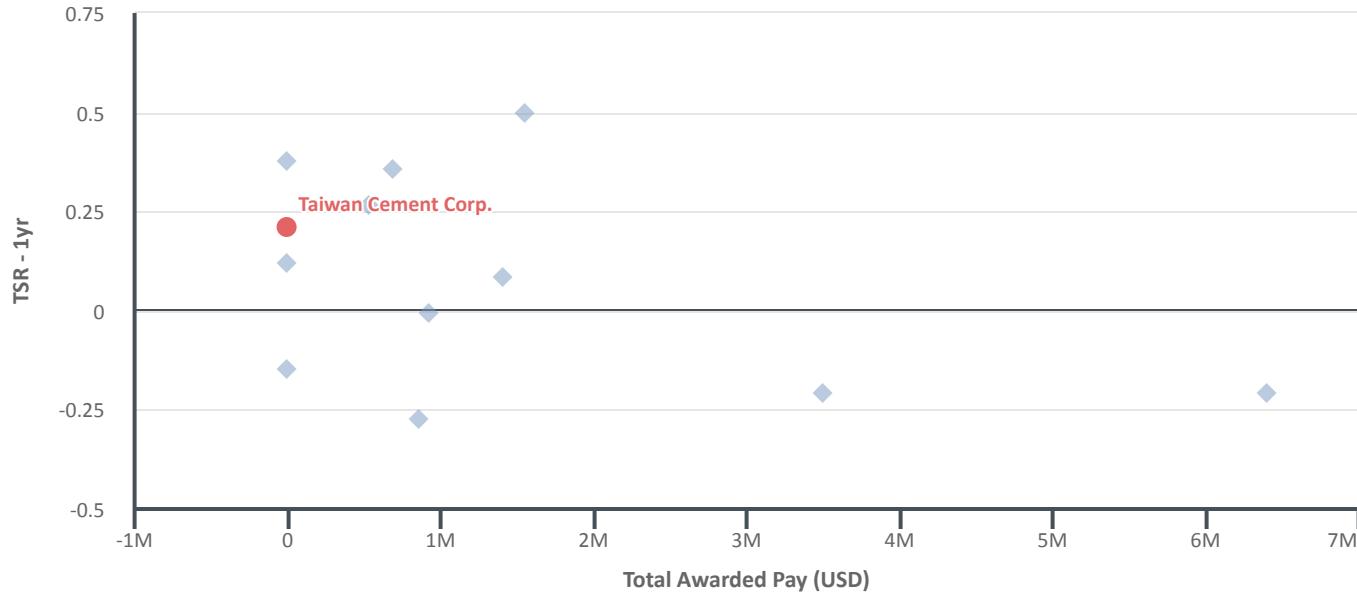
Key Metric	Key Metric Change	Date	Score Change*	Change Notes
No Nomination Committee	Flag Removed	Jul 07, 2022	0.30	Nomination committee function disclosed
Revenue Recognition	Flag Removed	Jun 12, 2022	0.53	Methodology enhancements
No Nomination Committee	Flag Added	Jun 12, 2022	-0.30	Methodology enhancements
Expense Recognition	Score Change	Jun 12, 2022	0.13	Methodology enhancements
Board Majority Independent of Other Interests	Flag Added	Jun 12, 2022	-0.30	Methodology enhancements
Board Majority Independent of Other Interests	Score Change	Jun 12, 2022	-0.20	Methodology enhancements
Asset-Liability Valuation	Score Change	Jun 12, 2022	0.26	Methodology enhancements
Related Party Transactions	Score Change	Jun 08, 2022	0.30	
Cross Shareholdings	Score Change	Jun 08, 2022	-0.20	
Overboarded Exec Directors	Flag Removed	Apr 27, 2022	0.50	
Cross Shareholdings	Score Change	Mar 10, 2022	-0.40	
Expense Recognition	Score Change	Mar 03, 2022	0.02	Updates to data for accounting peer group member(s)
Cross Shareholdings	Score Change	Mar 03, 2022	0.40	
Asset-Liability Valuation	Score Change	Mar 03, 2022	-0.10	Updates to data for accounting peer group member(s)
Revenue Recognition	Score Change	Nov 19, 2021	-0.09	Updates to data for accounting peer group member(s)
Expense Recognition	Score Change	Nov 19, 2021	0.01	Updates to data for accounting peer group member(s)
Asset-Liability Valuation	Score Change	Nov 19, 2021	-0.16	Updates to data for accounting peer group member(s)
Combined CEO/Chair	Flag Added	Oct 18, 2021	-0.20	
CEO Equity Policy	Flag Added	Oct 18, 2021	-0.20	
Significant Votes Against Directors	Flag Removed	Aug 31, 2021	0.50	AGM voting results updated
Entrenched Board	Flag Removed	Aug 31, 2021	0.80	
Combined CEO/Chair	Flag Removed	Aug 31, 2021	0.20	
CEO Equity Policy	Flag Removed	Aug 31, 2021	0.20	
Asset-Liability Valuation	Score Change	Aug 20, 2021	0.02	Updates to data for accounting peer group member(s)
Significant Votes Against Directors	Flag Added	Aug 03, 2021	-0.50	AGM voting results updated
Entrenched Board	Score Change	Aug 03, 2021	0.20	
Revenue Recognition	Score Change	Jul 15, 2021	-0.14	Updates to data for accounting peer group member(s)
Asset-Liability Valuation	Score Change	Jul 15, 2021	-0.02	Updates to data for accounting peer group member(s)
Entrenched Board	Score Change	Jun 25, 2021	-0.41	
Multiple Equity Classes with Different Voting Rights	Flag Removed	Jun 15, 2021	0.45	
Multiple Equity Classes with Different Voting Rights	Flag Added	Jun 10, 2021	-0.45	
Cross Shareholdings	Score Change	Jun 10, 2021	-0.40	
Business Combination Provision	Flag Removed	Jun 10, 2021	0.10	

*Score change available in respect of changes dated on or after 13 December 2017.



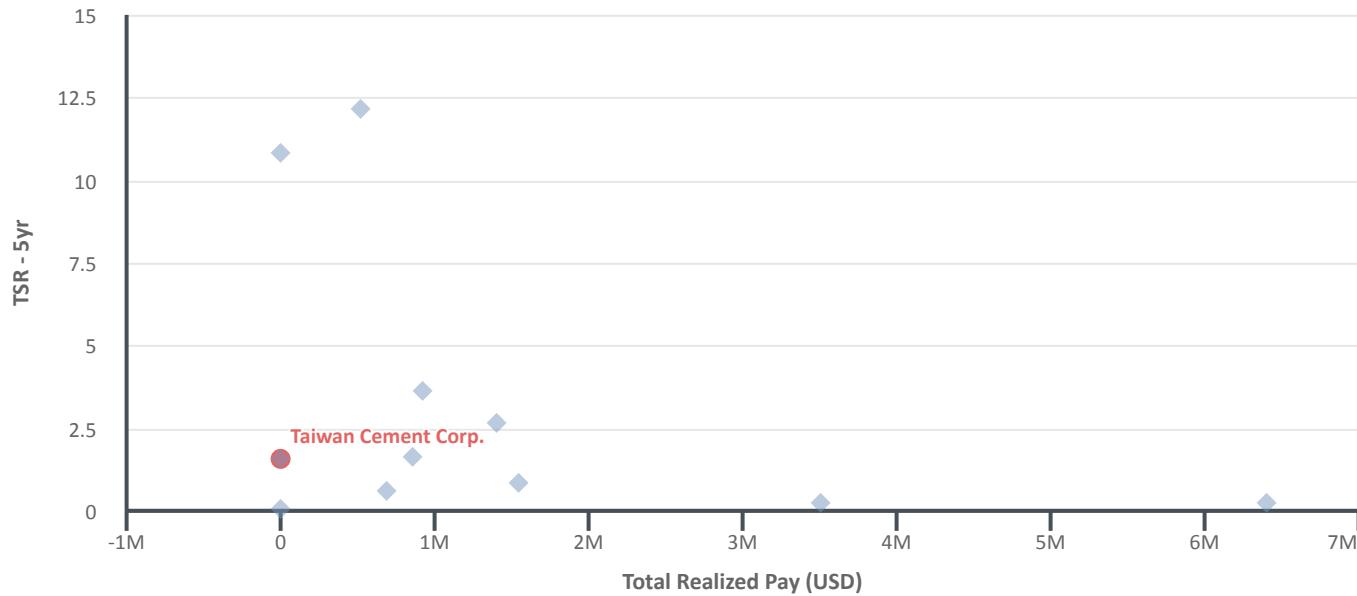
CEO PAY CHARTS

CEO TOTAL AWARDED PAY VERSUS PAY PEER GROUP



Pay Peers (♦) are used in the calculation of the Key Metric CEO Pay Total Summary and selected as set out in the MSCI Governance Metrics Methodology Document.

CEO TOTAL REALIZED PAY VERSUS PAY PEER GROUP



Pay Peers (♦) are used in the calculation of the Key Metric CEO Pay Total Summary and selected as set out in the MSCI Governance Metrics Methodology Document.



CCC | B | BB | **BBB** | A | AA | AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

SHAREHOLDER/MANAGEMENT PROPOSALS

MANAGEMENT PROPOSALS

Proxy Year	Proposal	Proposal Summary	Outcome	Votes For	Votes Against	Abstain/ Withheld%
2022	Other	1 The 110th Annual Business Report and Financial Statements are hereby acknowledged.	Approved	93.7%	0.6%	5.7%
2022	Other	2 The 110th Annual Surplus Distribution Proposal, please acknowledge it.	Approved	94.5%	0%	5.5%
2022	Stock Issuance	3 The Company's annual ? annual surplus is converted into capital to issue new shares, which is hereby submitted to a referendum.	Approved	92.6%	0%	7.4%
2022	Stock Issuance	4 The company plans to handle the cash capital increase and the issuance of ordinary shares to participate in the issuance of overseas depository receipts	Approved	92.4%	0.2%	7.4%
2022	Amend Certificate of Incorporation	5 Amendments to some of the articles of the Company's "Articles of Association" are hereby submitted to a referendum.	Approved	90.9%	1.6%	7.5%
2022	Other	6 Amend some of the provisions of the company's "Acquisition or Disposal of Assets Handling Procedures	Approved	92.6%	0%	7.4%
2021	Other	(I) To approve 2020 Annual Business Report and Financial Statements.	Approved	93.2%	0.1%	6.7%
2021	Other	(II) The proposal for distribution of 2020 profits	Approved	93.3%	0.1%	6.6%
2021	Other	(I) To approve the amendments on part of "Rules of Procedures for the Acquisition and Disposal of Assets".	Approved	86.1%	0%	13.9%
2021	Other	(II) To approve the amendments on part of Rules of Procedure for Annual Shareholders' Meeting.	Approved	91.9%	0%	8.1%
2021	Other	(III) Proposal to release the newly-elected Directors from non- competition restrictions.	Approved	85.1%	0.1%	14.8%
2020	Other	(III) To approve the amendments on part of Rules of Procedure for Annual Shareholders' Meeting	Approved	89.5%	0%	10.5%
2020	Amend Certificate of Incorporation	(II)To approve the amendments on part of Article of Incorporation.	Approved	89.5%	0%	10.5%
2020	Stock Issuance	(I) Proposal for a new share issue through capitalization of earnings.	Approved	89.5%	0%	10.5%
2020	Other	(II) The proposal for distribution of 2019 profits	Approved	91.1%	0%	8.9%
2020	Other	(I) To approve 2019 Annual Business Report and Financial Statements.	Approved	90.5%	0.2%	9.3%

*For Management Proposals at AGM's held more than three years ago, please refer to the Screener tool on ESG Manager.



CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

TAIWAN



CURRENCY: TAIWAN NEW DOLLAR (TWD)

The main regulatory and legislative framework for corporate governance in Taiwan is the Company Act, Securities and Exchange Act and the TWSE/TPEX listing rules for relevant companies. There is the Taiwan Corporate Governance for Best Practice Principles, which follows a "comply or explain" approach and the Corporate Governance 3.0: Sustainable Development Roadmap.

There are two types of corporate structures available for public companies in Taiwan: (i) a supervisory system consisting of annual general meeting (AGM), board of directors and a supervisor and (ii) an audit committee system consisting of AGM, board of directors and audit committee. Most companies in Taiwan adopt the two-tier board structure of a supervisory board and a management board (acting as the board of directors).

The board of directors must have at least five members. The number of independent directors must be at least two and no less than one-fifth of the total number of directors. Independent directors cannot concurrently serve as directors in more than five TWSE/TPEX listed companies. The audit committee must consist of at least three members and comprise entirely independent directors. The listing rules require establishing pay and nomination committees and internal risk management mechanisms. There are no board gender diversity requirements.

Related party transactions (RPTs) that reaches 10% or more of the company's total assets must obtain an appraisal report from a professional appraiser or the opinion of a certified public accountant. The law and regulations governing procedure for board directors' meetings of public companies stipulate that interested directors must disclose their interest to the board and must abstain from voting on the issue of the matter.

Company law states that pay of directors and supervisors is determined by the annual general meeting. The Taiwan Corporate Governance Best Practice Principles for public companies requires companies to disclose the directors' pay as well as the pay of supervisors, general managers, and vice general managers for the most recent fiscal year.

Controlled and principal ownership dominates in Taiwan, and families are the most common owner type.

Cross-shareholdings are a common control-maintaining mechanism used by Taiwanese companies. Multiple share classes with unequal voting rights are not permitted, but foreign ownership limits are present in strategic sectors such as telecommunications, shipping and aviation.

The Companies Act provides shareholders with the right to vote, elect and discharge directors and supervisors, determine the pay of directors and supervisors, amending the articles of incorporation, and approving certain transactions. Companies in Taiwan do not generally hold annual elections, since directors are typically elected for a three-year term. Shareholders with at least 1% of outstanding shares can propose agenda items to the annual general meeting. Shareholders owning 3% of the shares can request in writing for the supervisor to initiate an action against a director on behalf of the company.

A mandatory takeover bid is triggered if a bidder intends to purchase 20% or more shares within a period of 50 days.

Public companies must provide their disclosure information subject to both the Company Act and the Securities and Exchange Act. Companies are further required to appoint external auditors. External auditors are subject to a mandatory five-year rotation.



CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

DIRECTOR PROFILES

AN PING (NELSON) CHANG

Age:	Financial:	Yes
Gender: M	Risk:	No
Nationality: Taiwan	Industry:	Materials - Construction Materials, Banks - Banks

BIOGRAPHICAL INFORMATION

Synnex Technology International Corp., Source Date:

Zhang Anping has been Independent Director in Synnex Technology International Corp. since June 13, 2012. Zhang is also Chairman of the Board and Director in five other companies. Zhang holds a Master of Business Administration from New York University and a Bachelor's degree in Economics from Princeton University.

Taiwan Cement Corp., Source Date:

Mr. Zhang Anping has been Managing Director in Taiwan Cement Corporation since November 1, 2011. He was Vice Chairman of the Board in the Company. He is also Chairman of the Board, Independent Director and Director in other companies. He holds a Master of Business Administration (MBA) from New York University, the United States. He was Vice Chairman of the Board in another cement company.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
CTCI Corporation	Board Member	5	Jun 28, 2017		Yes	No	
Taiwan Cement Corp.	Executive, Board Member, Chairman, CEO	28	Apr 21, 1994		No	No	

BOARD COMMITTEES

Company	Committee Type	Position
Taiwan Cement Corp.	Nomination	Member



CHI CHIA HSIEH

Age: _____
 Gender: M
 Nationality: Taiwan

Financial: No
 Risk: No
 Industry:

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp., Source Date:

Xie Qijia is Director in Taiwan Cement Corporation. Xie is Vice Chairman of the Board, Chairman of the Board, Independent Director and Director in four other companies. Xie holds a Ph.D in Electrical Engineering from Santa Clara University, the United States.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	6	Jun 22, 2016		Yes	No	
Innolux Corporation	Board Member	9	Jun 19, 2013		Yes	Yes	

BOARD COMMITTEES

Company	Committee Type	Position
Innolux Corporation	Audit	Chair
Innolux Corporation	Pay	Chair



CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

CHI-TE CHEN

Age:	No
Gender:	M
Nationality:	Not Disclosed

Financial: No

Risk: No

Industry: Capital Goods - Construction & Engineering

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 04/30/2022

Chi-Te Chen is the Director of the Taiwan Cement Corp.MBA, University of California Santa Clara Vice Chairman, Chien Kuo Construction Co., Ltd.; Director, Chia Hsin Cement Corporation; Director, Chia Hsin Property Management and Development Corporation; Chairman, Chien Hwei Investment Co., Ltd.; Chairman, Rock Publishing International; Chairman, Golden Canyon Venture Capital Investment Co., Ltd.; Chairman, Golden Canyon II Venture Capital Investment Co., Ltd.; Director, Silver Shadow Holdings Co., Ltd.; Director, Golden Canyon Co., Ltd.; Director, Chien Kuo Asia Co., Ltd.; Director, China Real Estate Management Corporation; Chairman, Chien Kuo Building Co., Ltd.; Chairman, Chien Huei Cultural & Educational Foundation; Chairman, Chien Kuo Foundation for Arts and Culture and more.

CHIA HSIN CEMENT CORPORATION - Board Member Source Date: 05/19/2022

Chi-Te Chen is a Director at Chia-Hsin Cement Corporation and Vice Chairman of Chien Kuo Construction Co. Ltd.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
CHIA HSIN CEMENT CORPORATION	Board Member		Jun 14, 2022		No	Yes	
Taiwan Cement Corp.	Board Member	1	Jul 05, 2021		Yes	No	



CHIEN (JAMES) WEN

Age:	Financial:	Yes
Gender: M	Risk:	No
Nationality: Taiwan	Industry:	Semiconductors & Semiconductor Equipment - Semiconductors & Semiconductor Equipment

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 04/30/2022

Chien, Wen is a member of our board of directors. MBA, The Wharton Business School, University of Pennsylvania; Director, International CSRC Investment Holdings Co., Ltd.; Supervisor, Winbond Electronics Corp.; CFO, Winbond Electronics Corp.; President, Cathay Securities Investment Trust Director, Chinatrust Investment Co., Ltd.; Supervisor, Ta-Ho Maritime Corporation and more

Winbond Electronics Corporation - Audit Board Member Source Date: 05/13/2022

MBA, Wharton School in University of Pennsylvania President of Cathay Securities Investment Trust Co., Ltd.

CFO at Winbond Electronics Corp.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	4	Jun 22, 2018		Yes	No	



CHIH-CHUNG TSAI

Age: _____
 Gender: M
 Nationality: Taiwan

Financial: Yes
 Risk: No
 Industry: Banks - Banks

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 04/30/2022

Mr.Chih-Chung Tsai is the director of Taiwan Cement Corp. MBA, Bernard M.Baruch College, The City University of New York; President, Chinatrust Investment Co., Ltd.; Senior Consultant, Taipei Branch, Natixis; Director, Barclays Capital Securities (Taiwan) Co., Ltd.; CFO, Taipei Branch, Barclays Bank

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	4	Jun 22, 2018		Yes	No	



CHUN YING LIU

Age: 47
Gender: F
Nationality: Taiwan

Financial: No
Risk: No
Industry: Commercial & Professional Services - Professional Services

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 04/30/2022

Chun-Ying, Liu is a member of our board of directors.EMBA, College of Management, National Taiwan University; LLM, Northwestern University; LLB, National Taiwan University Partner, Tsar and Tsai Law Firm; Director, Chinatrust Investment Co., Ltd.; Independent Director, Jarly Technology Co., Ltd. and more

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	4	Jun 22, 2018		Yes	No	



JONG-PEIR (JOHN) LI

Age:	Financial:	Yes
Gender: M	Risk:	No
Nationality: Taiwan	Industry:	Materials - Construction Materials, Banks - Banks

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Executive, Board Member Source Date: 04/30/2022

Mr. Zhongpei (John) Li is President and director of Taiwan Cement Corp. Ph.D. NCCU Department of Management Information Systems; MS in Information Technology Management, Carey Business School, Johns Hopkins University; MS in Business Management, George Washington University; Independent Director, TransGlobe Life Insurance Inc.; President of HSBC (Taiwan) Commercial Bank and President, Taiwan, HSBC; Representative, Global Business Finance and Capital Market Department in HSBC; Director, Capital Market Department in CTBC Bank; CFO, Citibank (Taiwan); CFO, Citibank Taiwan Limited

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Executive, Board Member	4	Jun 22, 2018		No	No	



KANG LUNG (JASON) CHANG

Age: _____
 Gender: M
 Nationality: Taiwan

Financial: No
 Risk: No
 Industry:

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 04/30/2022

Kang Lung (Jason) Chang is the director of Taiwan Cement Corp.

MS in Management Studies, Sloan School of Management, Massachusetts Institute of Technology; President, Chia Hsin Cement Corporatio

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	10	Jun 21, 2012		No	No	



CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

KENNETH C.M. LO

Age: _____
 Gender: M
 Nationality: Taiwan

Financial: Yes
 Risk: No
 Industry: Banks - Banks

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 04/30/2022

Kenneth C.M. Lo is a member of our board of directors. MS in Finance, Manderson School of Business, The University of Alabama Managing Director, O-Bank

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	17	Feb 24, 2005		Yes	No	

BOARD COMMITTEES

Company	Committee Type	Position
Taiwan Cement Corp.	Nomination	Member



KUNG YI KOO

Age: **60**
 Gender: M
 Nationality: Taiwan

Financial: No
 Risk: No
 Industry: Diversified Financials - Diversified Financial Services

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 04/30/2022

Kung Yi Koo is the director of the Taiwan Cement Corp. MBA, The Wharton School of University of Pennsylvania; Vice President, Morgan Stanley Investment Banking Department; Vice Chairman, Taiwan Cement Corporation Chairman, International CSRC Investment Holdings Co., Ltd.; Chairman, Linyuan Advanced Materials Technology Co., Ltd.; Chairman, Circular Commitment Company; Chairman, Yun Cheng Investment Corporation; Chairman, Chung Cheng Development Investment Co., Ltd.; Chairman, Consolidated Resource Company; Chairman, Taiwan Transport & Storage Corp.; Chairman, Synpac (North Carolina), Inc.; Chairman, Synpac GP Corporation; Chairman, CCC USA Corp.; Chairman, Continental Carbon Company; Director, CSRC (BVI) Ltd.; Director, CSRC (Singapore) Pte. Ltd.; Director, SYPAC Ltd.; Director, Continental Carbon Nanotechnologies, Inc.; Director, E-One Moli Energy Corp.; Director, TCC Recycle Energy Technology Company; Director, Ho-Ping Power Company; Director, China Steel Chemical Corporation; Director, Yingde Dragon Mountain Cement Co., Ltd.; Director, TCC International Holdings Limited; Director, TCC International Limited; Director, Chiefolk Company Limited; Director, Hong Kong Cement Company Limited; Director, Kong On Cement Holdings Ltd.; Supervisor, TCC New (Hangzhou) Management Company Limited; Manager, Synpac Venture Capital L.P.; Manager, SVC Management, LLC; Manager, SVC Services, LLC and more.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	4	Jun 22, 2018		No	No	



LING TAI (LYNETTE) CHOU

Age: _____
 Gender: F
 Nationality: Taiwan

Financial: Yes
 Risk: No
 Industry:

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 04/30/2022

Lynette Ling-Tai, Chou is an independent director of our company. Ph.D. of Accounting, University of Houston; Master of Accounting, University of Houston; BS in International Business, Department of Commerce, National Taiwan University; Chief of Student Affairs, National Cheng Chi University; Dean, Department of Accounting, National Cheng Chi University; Professor, Guanghua School of Management; Managing Supervisor, Taiwan Public Television Services; Independent Director, F-MStar Co., Ltd. Independent Director, Chief Telecom Co., Ltd.; Emeritus and Tenure Professor Department of Accounting, National Cheng Chi University and more

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	4	Jun 22, 2018		Yes	Yes	

BOARD COMMITTEES

Company	Committee Type	Position
Taiwan Cement Corp.	Audit	Member
Taiwan Cement Corp.	Pay	Member
Taiwan Cement Corp.	Nomination	Member
Taiwan Cement Corp.	Risk	Member



MEI-HWA LIN

Age: _____
 Gender: F
 Nationality: Not Disclosed

Financial: No
 Risk: No
 Industry:

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 04/30/2022

Mei-Hwa Lin is appointed as director of the company. Ph.D. of Accounting, Drexel University; Dean and Professor, Department of Accounting, National Cheng Chi University Independent Director, Shin Kong Financial Holding Co., Ltd.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	1	Jul 05, 2021		Yes	Yes	

BOARD COMMITTEES

Company	Committee Type	Position
Taiwan Cement Corp.	Audit	Member
Taiwan Cement Corp.	Pay	Member



POR-YUAN WANG

Age: _____
 Gender: M
 Nationality: Taiwan

Financial: No
 Risk: No
 Industry:

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 04/30/2022

Wang Por-Yuan is a member of our board of directors. Ph.D., Carnegie Mellon University; Chairman, Taiwan Venture Capital Association; Chairman, Monte Jade Science & Technology Association of Taiwan Chairman, Sercomm Corporation; Chairman, Pacific Venture Partners; Director, Prosperity Dielectrics Co., Ltd.; Independent Director, UPC Technology Corporation; Chairman, K.T. Li Foundation Development of Science and Technology; Vice Chairman, Fairs Winds Foundation and more

TECO ELECTRIC & MACHINERY CO., LTD. - Inactive Source Date: 05/12/2022

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	13	Jun 19, 2009		Yes	No	

Taiwan Cement Corp. (1101)

MSCI
ESG RATINGS



CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

SHIOU-LING (SHERRY) LIN

Age: _____
Gender: F
Nationality: Taiwan

Financial: No
Risk: No
Industry:

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 04/30/2022

Ms. Lin Shiou Ling is the independent director of Taiwan Cement Corp

LLB, National Taiwan University; Director, Cathay Financial Holding Co., Ltd.; Director, Tong Lung Metal Industry Co., Ltd.; Independent Director, Accton Technology Corporation; Senior Consultant, Lee and Li, Attorneys-at-Law Special Senior Consultant, Lee and Li, Attorneys-at-Law; Chairman, Bar Koo Investment Corporation; Chairman, Bar Koo Consultation Corporation; Chairman, Cheng Yu Investment Corporation; Chairman, Cheng Yu Financial Consultation Corporation; Chairman, Cheng Yu Sheng Investment Corporation; Independence Director, Cathay Real Estate Development Co., Ltd.; Convener of Risk Management Committee and more

Accton Technology Corp. - Board Member Source Date: 05/26/2022

Mr. Lin is Independent Director and the Supervisor of Accton Technology Corp.

CATHAY REAL ESTATE DEVELOPMENT CO.,LTD. - Board Member Source Date: 05/27/2022

Ms. Shiou-Ling Lin is the Independent director of Cathay Real Estate Development Co Ltd .

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	1	Jul 05, 2021		Yes	Yes	
CATHAY REAL ESTATE DEVELOPMENT CO.,LTD.	Board Member	8	Jun 06, 2014		Yes	Yes	

BOARD COMMITTEES

Company	Committee Type	Position
CATHAY REAL ESTATE DEVELOPMENT CO.,LTD.	Audit	Chair
CATHAY REAL ESTATE DEVELOPMENT CO.,LTD.	Pay	Chair
Taiwan Cement Corp.	Audit	Member
Taiwan Cement Corp.	Pay	Member
Taiwan Cement Corp.	Nomination	Member
Taiwan Cement Corp.	Risk	Chair

Taiwan Cement Corp. (1101)

MSCI
ESG RATINGS



CCC B BB BBB A AA AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

VICTOR WANG

Age: _____
Gender: M
Nationality: Taiwan

Financial: Yes
Risk: No
Industry: Diversified Financials - Diversified Financial Services

BIOGRAPHICAL INFORMATION

Taiwan Cement Corp. - Board Member Source Date: 04/30/2022

Victor Wang is an independent director of our company.BA in Accounting, Soochow University; EMBA, National Taiwan University; Vice Chairman of Auditing Service Division, Deloitte Taiwan Director, Yageo Corporation; Director, YFY Investment Holding Co., Ltd.; Independent Director, Fulin Plastic Industry (Cayman) Holding Co., Ltd.; Independent Director, Taiwan Navigation Co., Ltd.; Independent Director, DACIN Construction Co., Ltd.; Convener of Audit Committee and more

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
Taiwan Cement Corp.	Board Member	10	Jun 21, 2012		Yes	Yes	

BOARD COMMITTEES

Company	Committee Type	Position
Taiwan Cement Corp.	Audit	Chair
Taiwan Cement Corp.	Pay	Member
Taiwan Cement Corp.	Risk	Member



YU-CHENG (ARTHUR) CHIAO

Age:	No
Gender:	M
Nationality:	Taiwan
Financial:	No
Risk:	No
Industry:	Semiconductors & Semiconductor Equipment - Semiconductors & Semiconductor Equipment

BIOGRAPHICAL INFORMATION

Walsin Lihwa Corp., Source Date:

Mr. Jiao Youjun has been Vice Chairman of the Board and Deputy Chief Executive Officer in Walsin Lihwa Corporation since May 31, 2005. He used to be Chairman of the Board in the Company. He holds a Master's degree in Electrical Engineering from Washington University, the United States. He also serves as Chairman of the Board and Director in other companies, including Baystar Holding Ltd., Marketplace Management Limited, Newfound Asia Corporation and Peaceful River Corporation.

CORPORATE BOARDS

Company	Role	Tenure	Appointed	Resigned	Independent of Management	Independent of Other Interests	Attendance
WALSIN TECHNOLOGY CORPORATION	Board Member	6	Jun 22, 2016		No	No	
Taiwan Cement Corp.	Board Member	10	Jun 21, 2012		Yes	Yes	
Nuvoton Technology Corporation	Board Member	14	Mar 14, 2008		No	No	
Winbond Electronics Corporation	Executive, Board Member, Chairman, CEO	34	Sep 04, 1987		No	No	
WALSIN LIHWA CORPORATION	Board Member	41	Apr 10, 1981		No	No	

BOARD COMMITTEES

Company	Committee Type	Position
Taiwan Cement Corp.	Audit	Member
Taiwan Cement Corp.	Pay	Chair
Taiwan Cement Corp.	Nomination	Member



GLOSSARY

MSCI ESG RATINGS AND SCORES

FINAL ESG RATING

- Letter ratings are relative within each MSCI ESG Ratings industry. Each Final Industry-Adjusted Company Score is converted to an equivalent rating on the AAA-CCC scale.

ESG PILLARS

- the **Environment Score** represents the weighted average of all Key Issues that fall under the Environment Pillar
- the **Social Score** represents the weighted average of all Key Issues that fall under the Social Pillar
- the **Governance Score** represents the sum of score deductions derived from Key Metrics included in Corporate Governance (including Board, Pay, Ownership & Control, and Accounting) and Corporate Behavior (including Business Ethics and Tax Transparency)
- the **Environment Weight** represents the sum of the weights of all Key Issues that fall under the Environment Pillar
- the **Social Weight** represents the sum of the weights of all Key Issues that fall under the Social Pillar
- the **Governance Weight** represents the sum of the weights of Corporate Governance and Corporate Behavior, with a minimum weight set at 33% for all rated issuers

KEY ISSUES

For each industry and Company-Specific Key Issue that contributes to the final rating:

- Weight** contribution to the final rating
- Exposure Score** (available for companies published since June 2011; excluding Raw Material Sourcing – Environmental)
- Management Score** (available for companies published since June 2011; excluding Raw Material Sourcing – Environmental)
- Overall **Key Issue Score**

WEIGHTED-AVERAGE KEY ISSUE SCORE VS. INDUSTRY RELATIVE SCORE

- the **Weighted-Average Key Issue Score** is dynamic, reflecting changes in any underlying scores as of the Last Update date, while the **Industry Relative Score** is more static and corresponds to the Rating Date. Issues that we determine do not present material risks or opportunities to companies in a given industry receive 0% weight and do not impact the overall ESG rating.

SCORES AND CALCULATION OF AVERAGE, PERCENTILE AND RATING DISTRIBUTION

All averages, percentiles, and rating distributions found in the report are based on companies in the relevant MSCI ESG Ratings Industry that are constituents of the MSCI ACWI and are calculated based on industry scores as of the date of publication of this report.

ESTIMATED CARBON EMISSIONS

Carbon estimates are based on carbon intensity (carbon emissions/sales). The Estimate Key represents the source of the estimated carbon emissions data. E.CSI represents Company-Specific Intensity estimates based on previously disclosed data. E.GICSSI represents estimates based on the GICS Sub-Industry average. For E.GICSSI we set five levels of confidence (High, Moderately High, Moderate, Moderately Low, and Low). The Carbon Estimation Methodology document, available on ESG Manager, describes the estimation model in greater detail.



CCC | B | BB | **BBB** | A | AA | AAA

RATING ACTION DATE: December 17, 2021
LAST REPORT UPDATE: September 07, 2022

GOVERNMENT SUPPORT RATING

We calculate the 'government support rating' for Supranationals and Development Banks based on the weighted average of member countries' Governance scores using the MSCI ESG Government Ratings methodology. These scores are based on measures of political governance (strength of institutions, corruption control, civil liberties, and human rights) and financial accountability.



NOTICE AND DISCLAIMER

- MSCI ESG Research LLC is a Registered Investment Adviser under the Investment Advisers Act of 1940 and a subsidiary of MSCI Inc. Except with respect to any applicable products or services from MSCI ESG Research, neither MSCI nor any of its products or services recommends, endorses, approves or otherwise expresses any opinion regarding any issuer, securities, financial products or instruments or trading strategies and neither MSCI nor any of its products or services is intended to constitute investment advice or a recommendation to make (or refrain from making) any kind of investment decision and may not be relied on as such. Issuers mentioned or included in any MSCI ESG Research materials may include MSCI Inc., clients of MSCI or suppliers to MSCI, and may also purchase research or other products or services from MSCI ESG Research. MSCI ESG Research materials, including materials utilized in any MSCI ESG Indexes or other products, have not been submitted to, nor received approval from, the United States Securities and Exchange Commission or any other regulatory body.
- This document and all of the information contained in it, including without limitation all text, data, graphs, charts (collectively, the "Information") is the property of MSCI Inc. or its subsidiaries (collectively, "MSCI"), or MSCI's licensors, direct or indirect suppliers or any third party involved in making or compiling any Information (collectively, with MSCI, the "Information Providers") and is provided for informational purposes only. The Information may not be modified, reverse-engineered, reproduced or redistributed in whole or in part without prior written permission from MSCI.
- The Information may not be used to create derivative works or to verify or correct other data or information. For example (but without limitation), the Information may not be used to create indexes, databases, risk models, analytics, software, or in connection with the issuing, offering, sponsoring, managing or marketing of any securities, portfolios, financial products or other investment vehicles utilizing or based on, linked to, tracking or otherwise derived from the Information or any other MSCI data, information, products or services.
- The user of the Information assumes the entire risk of any use it may make or permit to be made of the Information. NONE OF THE INFORMATION PROVIDERS MAKES ANY EXPRESS OR IMPLIED WARRANTIES OR REPRESENTATIONS WITH RESPECT TO THE INFORMATION (OR THE RESULTS TO BE OBTAINED BY THE USE THEREOF), AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, EACH INFORMATION PROVIDER EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES (INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF ORIGINALITY, ACCURACY, TIMELINESS, NONINFRINGEMENT, COMPLETENESS, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) WITH RESPECT TO ANY OF THE INFORMATION.
- Without limiting any of the foregoing and to the maximum extent permitted by applicable law, in no event shall any Information Provider have any liability regarding any of the Information for any direct, indirect, special, punitive, consequential (including lost profits) or any other damages even if notified of the possibility of such damages. The foregoing shall not exclude or limit any liability that may not by applicable law be excluded or limited, including without limitation (as applicable), any liability for death or personal injury to the extent that such injury results from the negligence or willful default of itself, its servants, agents or subcontractors.
- Information containing any historical information, data or analysis should not be taken as an indication or guarantee of any future performance, analysis, forecast or prediction. Past performance does not guarantee future results.
- The Information should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. All Information is impersonal and not tailored to the needs of any person, entity or group of persons.
- None of the Information constitutes an offer to sell (or a solicitation of an offer to buy), any security, financial product or other investment vehicle or any trading strategy.
- It is not possible to invest directly in an index. Exposure to an asset class or trading strategy or other category represented by an index is only available through third party investable instruments (if any) based on that index. MSCI does not issue, sponsor, endorse, market, offer, review or otherwise express any opinion regarding any fund, ETF, derivative or other security, investment, financial product or trading strategy that is based on, linked to or seeks to provide an investment return related to the performance of any MSCI index (collectively, "Index Linked Investments"). MSCI makes no assurance that any Index Linked Investments will accurately track index performance or provide positive investment returns. MSCI Inc. is not an investment adviser or fiduciary and MSCI makes no representation regarding the advisability of investing in any Index Linked Investments.
- Index returns do not represent the results of actual trading of investible assets/securities. MSCI maintains and calculates indices, but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the index or Index Linked Investments. The imposition of these fees and charges would cause the performance of an Index Linked Investment to be different than the MSCI index performance.
- The Information may contain back tested data. Backtested performance is not actual performance, but is hypothetical. There are frequently material differences between backtested performance results and actual results subsequently achieved by any investment strategy.
- Constituents of MSCI equity indexes are listed companies, which are included in or excluded from the indexes according to the application of the relevant index methodologies. Accordingly, constituents in MSCI equity indexes may include MSCI Inc., clients of MSCI or suppliers to MSCI. Inclusion of a security within an MSCI index is not a recommendation by MSCI to buy, sell, or hold such security, nor is it considered to be investment advice.
- Data and information produced by various affiliates of MSCI Inc., including MSCI ESG Research LLC and Barra LLC, may be used in calculating certain MSCI equity indexes. More information can be found in the relevant standard equity index methodologies on www.msci.com.
- MSCI receives compensation in connection with licensing its indices to third parties. MSCI Inc.'s revenue includes fees based on assets in investment products linked to MSCI equity indexes. Information can be found in MSCI's company filings on the Investor Relations section of www.msci.com.
- Any use of or access to products, services or information of MSCI requires a license from MSCI. MSCI, Barra, RiskMetrics, IPD, InvestorForce, and other MSCI brands and product names are the trademarks, service marks, or registered trademarks of MSCI or its subsidiaries in the United States and other jurisdictions. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and Standard & Poor's. "Global Industry Classification Standards (GICS)" is a service mark of MSCI and Standard & Poor's.
- For information about how MSCI ESG Research LLC collects and uses personal data concerning officers and directors, please refer to our Privacy Notice at <https://www.msci.com/privacy-pledge>.

ABOUT MSCI ESG RESEARCH PRODUCTS AND SERVICES

MSCI ESG Research products and services are provided by MSCI ESG Research LLC, and are designed to provide in-depth research, ratings and analysis of environmental, social and governance-related business practices to companies worldwide. ESG ratings, data and analysis from MSCI ESG Research LLC are also used in the construction of the MSCI ESG Indexes. MSCI ESG Research LLC is a Registered Investment Adviser under the Investment Advisers Act of 1940 and a subsidiary of MSCI Inc.

ABOUT MSCI

MSCI is a leading provider of critical decision support tools and services for the global investment community. With over 50 years of expertise in research, data and technology, we power better investment decisions by enabling clients to understand and analyze key drivers of risk and return and confidently build more effective portfolios. We create industry-leading research-enhanced solutions that clients use to gain insight into and improve transparency across the investment process.