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ARAB ENGINEERING BUREAU

FORWARD

- 1 The Qatar Construction Specifications (QCS) includes references and certain sections which address occupational health and safety. To ensure that the users of the RD/SAMAS are fully aware of where occupational health and safety issues are addressed in the QCS, the following table summarises where potential overlaps may occur. For consistency, it is recommended that in matters relating to occupational health and safety reference is made first to the RD/SAMAS. For the purpose of clarity, however, references are made in the relevant section of the RD/SAMAS to their comparable sections in the QCS and vice versa.
- 2 The purpose of QCS is to provide as a general technical guide for acceptable construction work practices in the State of Qatar, considering this; any addition for technology, material, specification, standard that are not mentioned in this section or their modification, shall be subject to approval as stated in the introduction of QCS (00-02).

Sr. No	QCS Section No.	Part No.	Part Name	Item No.	Item Name
1	1	7	Submittals	7.5.2	Health and Safety Organization Chart
2	1	7	Submittals	7.6.1	Health and Safety Plan
3	1	10	Health and Safety	All	All
4	1	11	Engineer's Site Facilities	11.4.6	Safety Equipment and Clothing
5	1	14	Temporary Works and Equipment	14.4	Test Certificates for Cranes and Lifting Tackle
6	1	15	Temporary Controls	All	All
7	1	16	Traffic Diversions	16.1.3	Safety
8	1	8	General	8.1.6	Safety
9	3	1	General	1.4.12	Safety and Management
10	4	1	General Requirements for Piling Work	1.6	Safety
11	4	4	Deep Foundations	4.9.1.7	Safety Precautions
12	4	4	Deep Foundations	4.9.1.13	Protection of Testing Equipment
13	6	1	General	1.6	Temporary Fencing
14	6	7	Asphalt Plants	7.8.13	Safety Requirements
15	6	14	Works in Relation to Services	14.2.2	Safety
16	8	1	General	1.3.2	Health and Safety
17	8	8	Painting and Protective Coatings	8.1.9	Safety
18	8	9	Trenchless Pipeline Construction	9.2.5	Safety Requirements
19	8	10	Pipeline Cleaning and Inspection Survey	10.1.7	Safety Requirements
20	8	11	Sewer Rehabilitation	11.2.2	Safety
21	9	1	General	1.2.8	Safety Guards
22	9	1	General	1.2.16	Noise Levels and Vibration
23	19	5	Hot Water Storage	5.1.6	Safety
24	21	1	General Provisions for electrical Installation	1.1.11	Fire and Safety Precautions
25	21	1	General Provisions for electrical Installation	1.1.23	Safety Interlocks
26	24	1	General	1.1.4	Scaffolding
27	29	1	Design Aspects	1.1.5	Fire Resistance Period
28	29	3	Geotechnical Specifications	2.3.1.5	Safety
29	29	4	Tunnel	4.5.8	Safety Regulations
30	29	4	Tunnel	4.5.9	Fire Prevention
31	29	4	Tunnel	4.6.4	Safety Measures and Systems
32	29	7	Concrete Structures	7.1.10	Safety Railing

Construction Site Safety

1.8.1 Sources of Health and Safety Information

British Standards Institute (BSI)

BSI publications, including all British, European and ISO standards and other reference material, can be obtained direct from:

British Standards Institution

Customer Services
389 Chiswick High Road
London W4 4AL
Tel: 020 8996 9001
Fax: 020 8996 7001
Email: cservices@bsigroup.com

Alternatively, they can be ordered:

- online from www.bsonline.bsi-global.com
- from most branches of good quality bookshops; details on the above website.

Construction Standards

British and European Standards

British and European Standards	Sections							
	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
BS 598 Sampling and examination of bituminous mixtures for roads and other paved areas	X							
BS 1129 Specifications for portable timber ladders, steps, trestles and lightweight staging			X					
BS 1139-3 Metal scaffolding. Specification for prefabricated mobile access and working			X					
BS 1377 Methods of test for soils for civil engineering purposes					X			
BS 1710 Specification for identification of pipelines and services					X			
BS 2037 Specification for portable aluminium ladders, steps, trestles and lightweight stagings			X					
BS 2482:2009 Specification for timber scaffold boards			X					
BS 2830 Specification for suspended access equipment for use in the building, engineering construction, steeplejack and cleaning industries			X					
BS 3212 Specification for flexible rubber tubing, rubber hose and rubber hose assemblies for use in LPG vapour phase and LPG air installations							X	
BS 4078-1 Powder actuated fixing systems. Code of practice for safe use				X				
BS 4078-2 Powder actuated fixing systems. Specification for tools				X				
BS 4250 Commercial butane and propane							X	
BS 4293 Specification for residual current operated circuit breakers					X			
BS 4363 Specification for distribution assemblies for reduced low voltage electricity supplies for construction and building sites						X		
BS 4465 Specification for design and construction of electric hoists for both passengers and materials				X				
BS 4481 Part 2 Bonded abrasive products				X				
BS 5228:2009-1 CoP for noise and vibration control on construction and open sites - Noise		X						
BS 5228:2009-2 CoP for noise and vibration control on construction and open sites - Vibration		X						
BS 5266 Part 1 Emergency lighting							X	
BS 5266-10 Guide to design and provision of emergency lighting							X	
BS 5306 Fire extinguishing installations and equipment on premises							X	
BS 5306-3 CoP for maintenance of portable fire extinguishers							X	

British and European Standards	Sections							
	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
BS 5499 Fire safety signs, notices and graphic symbols					X		X	
BS 5531 CoP for safety in erecting structural frames			X					
BS 5534 CoP for slating and tiling			X					
BS 5588 Fire precautions in the design, construction and use of buildings							X	
BS 5607 CoP for safe use of explosives in the construction industry					X			
BS 5972 Specification for photoelectric control units for road lighting	X							
BS 5974 CoP for temporarily installed suspended scaffolds and access equipment			X					
BS 5975 CoP for Falsework	X		X					
BS 6187 CoP for demolition (under review)					X			
BS 7071 Specification for portable residual current devices						X		
BS 7121-1 Code of Practice for safe use of cranes. General			X		X			
BS 7121-2 Inspecting, testing and examination				X				
BS 7121-3 Mobile cranes				X				
BS 7121-4 Lorry loaders				X				
BS 7121-5 Tower cranes				X				
BS 7212 CoP for safe use of construction hoists				X				
BS 7273 CoP for the operation of fire protection measures							X	
BS 7288 Specifications for socket outlets incorporating residual current devices (SRCDs)						X		
BS 7375 CoP for the distribution of electricity on construction and building sites						X		
BS 7430 CoP for earthing						X		
BS 7671 2008 IEE wiring regulations 17th edition						X		
BS 7863 Recommendations for colour coding to indicate the extinguishing media contained in portable fire extinguishers								X
BS 7883 CoP and use of anchor devices conforming to BS EN 795			X					
BS 8411 Code of practice in the use of safety nets on construction sites and other works			X					
BS 8454 Code of practice for the delivery of training and education for work at height and rescue			X					
BS 8476 Code of practice for the safe use of concrete pumps				X				
BS 8800 Guide to occupational health and safety management systems	X							
BS 18004 Guide to achieving effective occupational health and safety performance	X							

British and European Standards	Sections							
	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
BS 31100 Code of practice for risk management	X							
BS EN 3 Portable fire extinguishers Parts 3, 6 and 7							X	,
BS EN 131-3 Ladders - user instructions			X					
BS EN 136 Respiratory protective devices. Full face masks. Requirements, testing, marking		X						
BS EN 137 Specification for respiratory protective devices: self-contained open-circuit compressed air breathing apparatus		X						
BS EN 138 Respiratory protective devices. Specification for fresh air hose breathing apparatus for use with full face mask, half mask or mouth piece assembly		X						
BS EN 140 Respiratory protective devices. Half masks and quarter masks. Requirements, testing, marking		X						
BS EN 143 Respiratory protective devices. Particle filters. Requirements, testing, marking		X						
BS EN 149 Respiratory protective devices. Filtering half masks to protect against particles. Requirements, testing, marking		X						
BS EN 165 Personal eye protection. Vocabulary		X						
BS EN 166 Personal eye protection. Specifications		X		X				
BS EN 169 Personal eye protection. Filters for welding and similar operations		X						
BS EN 170 Personal eye protection. Ultraviolet filters		X						
BS EN 171 Personal eye protection. Infrared filters		X						
BS EN 172 Personal eye protection. Sunglare filters for industrial use		X						
BS EN 175 Equipment for eye and face protection during welding and allied processes		X						
BS EN 280 Mobile elevating work platforms. Design calculations. Stability criteria. Construction. Safety. Examinations and tests			X	X				
BS EN 340 Protective clothing. General requirements						X		
BS EN 341 Personal protective equipment against falls from a height. Descender devices			X					
BS EN 352-1 Hearing protection. Safety requirements and testing. Ear muffs		X						
BS EN 352-2 Hearing protection. Safety requirements and testing. Ear plugs		X						
BS EN 353-1 Personal protective equipment against falls from a height. Guided type fall-arresters including a rigid anchor line			X					
BS EN 353-2 Personal protective equipment against falls from a height. Guided type fall-arresters including a flexible anchor line			X					

British and European Standards	Sections							
	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
BS EN 354 Personal protective equipment against falls from a height. Lanyards			X	X				
BS EN 355 Personal protective equipment against falls from a height. Energy absorbers			X	X				
BS EN 358 Personal protective equipment against falls from a height. Belts for work positioning systems and restraint and work positioning lanyards			X	X				
BS EN 360 Personal protective equipment against falls from a height. Retractable type fall-arresters			X					
BS EN 361 Personal protective equipment against falls from a height. Full body harness			X	X	X			
BS EN 362 Personal protective equipment against falls from a height. Connectors			X					
BS EN 363 Personal protective equipment against falls from a height. Fall-arrest systems			X	X				
BS EN 364 Personal protective equipment against falls from a height. Test methods			X					
BS EN 365 Personal protective equipment against falls from a height. General requirements for instructions for use, maintenance, periodic examination, repair, marking and packaging			X					
BS EN 388 Protective gloves against mechanical risks		X						
BS EN 393 Lifejackets and personal buoyancy aids. Buoyancy aid 50			X					
BS EN 397 Specification for industrial safety helmets		X		X				
BS EN 420 Protective gloves. General requirements		X						
BS EN 474 Earth moving machinery. Safety					X			
BS EN 529 RPE - Recommendations for selection, use, care and maintenance		X						
BS EN 671 Fixed fire fighting systems. Hose systems							X	X
BS EN 752 Drain and sewer systems outside buildings					X			
BS EN 792-13 Hand-held non-electric power tools. Safety requirements. Fastener driving tools				X				
BS EN 795 Protection against falls from a height. Anchor devices. Requirements and testing			X	X				
BS EN 1146 Respiratory protective devices Self-contained open-circuit compressed air breathing apparatus incorporating a hood for escape					X			
BS EN 1261 Fibre ropes for general service. Hemp			X					
BS EN 1263-1 Safety nets. Safety requirements, test methods			X					
BS EN 1263-2 Safety nets. Safety requirements for the positioning limits			X					
BS EN 1492-1:2000 Textile slings. Safety. Flat woven webbing slings, made of man-made fibres, for general purpose use				X				

British and European Standards	Sections							
	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
BS EN 1492-2:2000 Textile slings. Safety. Roundslings, made of man-made fibres, for general purpose use				X				
BS EN 1492-4 Textile slings. Safety. Lifting slings for general service made from natural and man-made fibre ropes				X				
BS EN 1496 Personal fall protection equipment - rescue lifting devices			X					
BS EN 1498 Personal fall protection equipment - rescue loops			X					
BS EN 1827 Respiratory protective devices. Half masks without inhalation valves with separable filters for gases and particles. Requirements, testing, marking		X						
BS EN 1869 Fire Blankets							X	
BS EN 1870 Safety at woodworking machines - circular saws and vertical panel saws				X				
BS EN ISO 5349-1 Mechanical vibration. Measurement and assessment of human exposure to hand transmitted vibration		X						
BS EN ISO 6103 Bonded adhesive products. Permissible unbalances of grinding wheels as delivered. Testing				X				
BS EN 12158-1: Builders hoists for goods Part 1: Hoists with accessible platforms				X				
BS EN 12158-2: Builders hoists for goods. Part 2: Inclined hoists with non-accessible load carrying devices				X				
BS EN 12159: Builders hoists for persons and materials with vertical guided cages				X				
BS EN 12385-2 Steel wire ropes. Safety. Definitions, designation and classification				X				
BS EN 12385-4 Steel wire ropes. Safety. Stranded ropes for general lifting applications				X				
BS EN 12810-2 Facade scaffolds made of prefabricated components. Particulars of structural design			X					
BS EN 12811-1 Temporary works equipment. Part I Scaffolds. Performance requirements and general design			X					
BS EN 12811-2 Temporary works equipment. Information on materials			X					
BS EN 12841 Personal fall protection equipment - rope access - rope adjustment devices			X					
BS EN 12899-1: Fixed, vertical road traffic signs. Fixed signs	X							
BS EN 13794 Respiratory protective devices. Self-contained close-circuit breathing apparatus for escape		X			X			
BS EN 13411-5 Terminations for steel wire rope. Safety. U-bolt wire rope grips				X				
BS EN 14439 Cranes - safety - tower cranes			X					
BS EN 14502-1 Cranes - equipment for lifting persons - suspended baskets				X				

British and European Standards	Sections							
	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
BS EN 14593-1 Respiratory protective devices. Compressed air line breathing apparatus with demand valve. Apparatus with a full mask. Requirements, testing, marking		X						
BS EN 14593-2 Respiratory protective devices. Compressed air line breathing apparatus with demand valve. Apparatus with a half mask at positive pressure. Requirements, testing, marking BS		X						
BS EN 14686 Fibre ropes of polyester/polyolefin dual fibres				X				
BS EN 50144-1 Safety of hand-held electric motor operated tools. General requirements					X			
BS EN 60079-14:2008 Explosive atmospheres - electrical installations design, selection and erection							X	
BS EN 60309 Plugs, socket-outlets and couplers for industrial purposes					X			
BS EN 60825 Safety of laser products								
BS EN 61557 Electrical safety in low voltage distribution systems					X			
BS EN ISO 12402-2:2006 Personal flotation devices. Lifejackets, performance level 275. Safety requirements			X					
BS EN ISO 12402-3 Personal flotation devices. Lifejackets, performance level 150. Safety requirements			X					
BS EN ISO 12402-4 Personal flotation devices. Lifejackets, performance level 100. Safety requirements			X					
BS EN ISO 12402-5 Personal flotation devices. Buoyancy aids (level 50). Safety requirements			X					
BS EN ISO 12402-8 Personal flotation devices. Accessories. Safety requirements and test methods			X					
BS EN ISO 14001:2004 Environmental management systems. Requirements with guidance for use								
BS ISO 525 Bonded abrasive products. General requirements. Pt1: Specification for general features of abrasive wheels, segments, bricks and sticks				X				
BS OHSAS 18001 Occupational health and safety management systems. Requirements	X							
BS OHSAS 18002 Occupational health and safety management systems -guidelines for the implementation of OHSAS 18001:2007	X							
PD 2754-2: IEC 60536-2:1992 Classification of electrical and electronic equipment with regard to protection against electric shock. Guide to requirements for protection against electric shock					X			
PD 5304 Safe use of machinery				X				

Construction Site Safety

1.8.2 Safety Signs

1.8.2.1 Introduction

- 1 The colours used and their meanings are outlined on the following pages, together with example signs.

1.8.2.2 Prohibition signs

- 1 These signs are red and white with a black image. The signs inform people of things they **must not do**, for example 'No pedestrians' or 'No smoking'.



No pedestrians



Scaffolding incomplete



No smoking



Children must not play

1.8.2.3 Mandatory signs

- 1 These signs are blue with a white image and inform people of things that they **must do**, for example 'Wear ear protection' or 'Use crawling boards'.



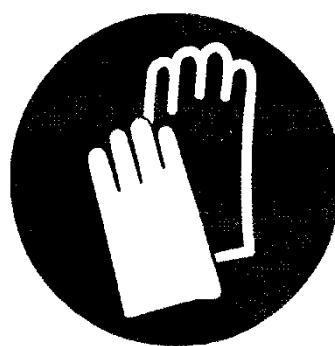
Wear a hard hat



Wear a respirator



Wear eye protection



Wear safety gloves



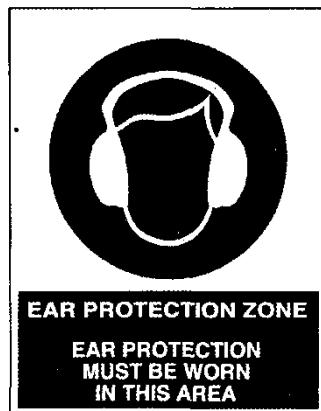
Wear ear protection



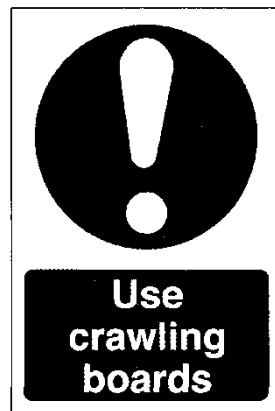
Wear work boots



Wear a safety harness



Ear protection zone



Use crawling boards

1.8.2.4 Warning signs/signs on hazardous substances

- 1 These signs are either yellow or amber with a black image and warn people of potentially dangerous situations, for example 'Forklift trucks operating' or 'Fragile roof.'



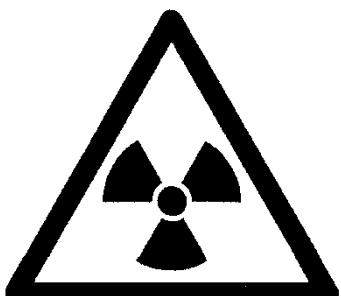
General warning



Flammable



Corrosive



Radioactive



Toxic



Explosive



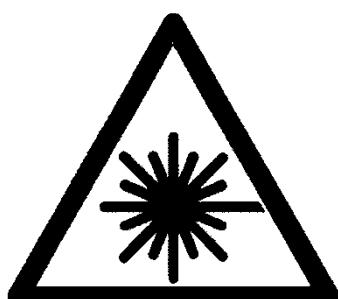
Fragile roof



Danger of electrocution



Forklift trucks operating



Laser beams



Highly flammable



Harmful



Irritant



Falling objects



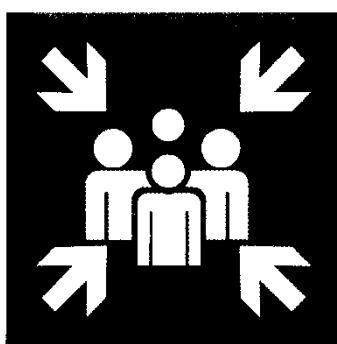
Suspended loads



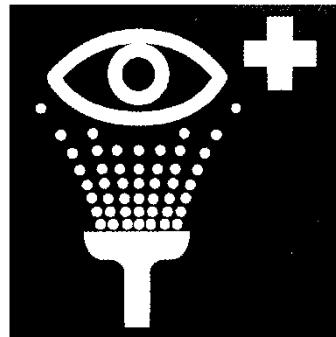
Hazardous to the environment

1.8.2.5 Safe condition signs

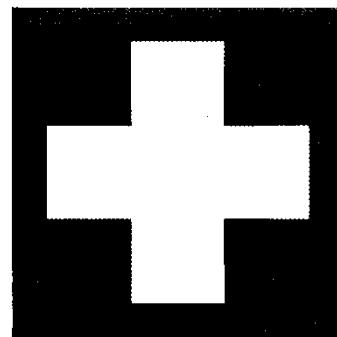
- 1 These signs are green with a white image and inform people of features of the site that are associated with a safe condition, for example 'First aid' or 'Fire exit'.



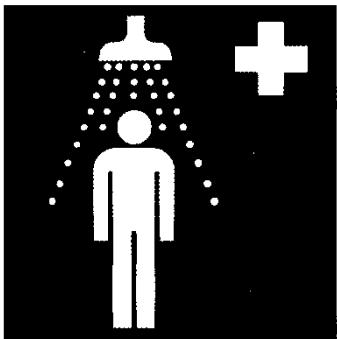
Assembly point



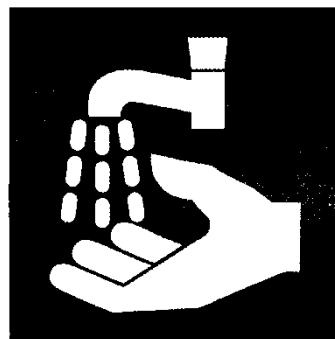
Emergency eye wash



First aid



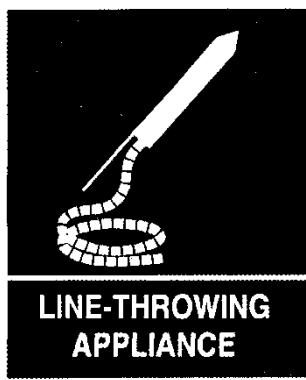
Emergency shower



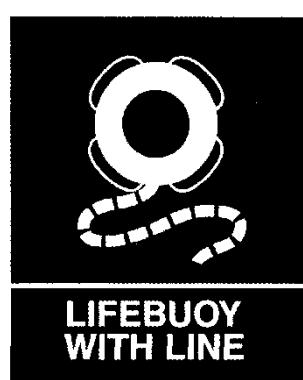
Wash hands



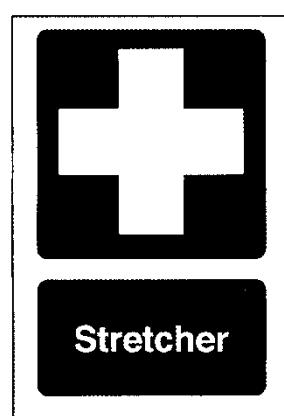
Drinking water



Line-throwing appliance



Lifebuoy with line



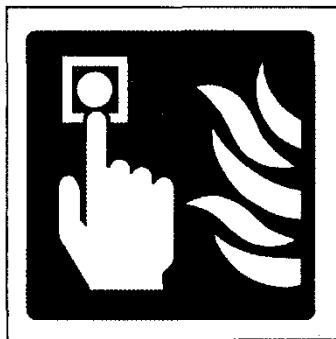
Stretcher location



Fire exit

1.8.2.6 Fire safety

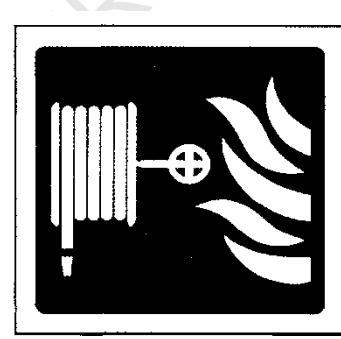
- 1 These signs are also red and white, but predominantly red with a white image. They indicate the location of facilities associated with fire safety such as 'Call point' or 'Fire point'.



Call point



Fire point



Hose reel

1.8.2.7 Mixed signs

- 1 Often 'mixed signs' will be displayed, which are a combination of the four main types of sign. For example, a sign at the site entrance might include:
- an 'Unauthorised access strictly prohibited' sign - red and white = **must not do**
 - an 'All visitors must report to the site office' sign - blue and white = **must do**
 - a 'Beware open excavations' sign - yellow and black = **beware of danger**
 - an 'Assembly point' sign - green and white = **safe condition**.
- 2 Similar signs that indicate, for example, the location of a dangerous substance storage area will also usually comprise a combination of signs, such as a 'Flammable' (warning) sign, a 'No smoking' (prohibition) sign, and additional appropriate wording.



END OF DOCUMENT