



CHINA TIANRUI GROUP CEMENT COMPANY LIMITED

中國天瑞集團水泥有限公司

(於開曼群島註冊成立的有限公司)

(股份代號：1252)

**Environmental, Social,
and Governance Report
2018**

CHINA TIANRUI GROUP CEMENT COMPANY LIMITED
ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT 2018

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1 ABOUT THE COMPANY

The main scope of business of China Tianrui Group Cement Co. Limited (Stock Code: 01252) (“the Company” and, with its subsidiaries, collectively referred to as “the Group”) is production, sales and export of cement, clinker, fly ash, slag powder, concrete and other cement products. As of 31 December 2018, the Group has 20 clinker production lines and 59 cement grinding production lines. The annual production capacity of clinker and cement is 29,600,000 tonnes and 56,700,000 tonnes respectively.

The Group has established internationally recognized policies and management framework to achieve control of environmental responsibility-driven and quality-driven operations. The Group has been committed to a sustainable business that balances important environmental, social and governance (ESG) issues through comprehensive frameworks and regular reviews of key performance indicators.

2 ABOUT THIS REPORT

2.1 BASIS OF PREPARATION OF REPORT AND SCOPE OF REPORTING

This report is prepared in accordance with Appendix 27 *Environmental, Social and Governance Reporting Guide* of the *Rules Governing the Listing of Securities of the Stock Exchange of Hong Kong Limited*, and is based on the principle of materiality, quantitative, balance and consistency. This report has fulfilled the “Comply or Explain” requirements set out in the reporting guide. It has also provided the performance of key performance indicators in regard to the Group’s social aspect, following the “recommended disclosure” requirements in the guidelines.

This report covers environmental, social and governance related activities from 1 January 2018 to 31 December 2018.

This ESG report covers the Group’s cement and clinker production businesses in Henan, Liaoning, Tianjin and Anhui Province, among them, Henan and Liaoning account for the largest proportions.

2.2 CONTACT INFORMATION

The Group welcomes comments and suggestions related to the report. Please feel free to send us your feedback to ir@ctracement.com.

3 MESSAGE FROM THE BOARD OF DIRECTORS

We are pleased to share the Group's significant achievements in promoting sustainable development in this 2018 Environmental, Social and Governance (ESG) report.

During the year, the cement industry has implemented a series of policies including government supply-side reforms and environmental protection. With the implementation of various measures such as energy conservation and emission reduction, staggering peak production and mine remediation, a batch of backward production capacity have shut down and withdrawn, which has increased industry concentration and improved industry self-regulation. The Chinese government has increased the intensity of implementing environmental protection laws and regulations related to eco-friendliness, pollution prevention, energy conservation and emission reduction. High pressure situations of "environmental protection inspections" have been maintained throughout the year. Legislation and law enforcement work have been carried out for the prevention of the main pollutants such as water, soil and atmosphere, which had a significant impact on major companies in the industry. In June 2018, the State Council issued the "Three-Year Action Plan to Win the Blue Sky Defense War", which significantly reduced the total emissions of major atmospheric pollutants, and in turn lowered greenhouse gas emissions, further reducing the concentration of particulate matter (PM2.5). Environmental protection policies and law enforcement supervision have made a significant impact on the cement industry and the Group. On one hand, they have brought on cost related pressures and challenges due to environmental protection matters, and on the other hand, they have promoted the elimination of backward production capacity and increase of industry barriers, which is conducive to the rebound of sales price, thus bringing positive effects.

During the year, the Chinese government have been persistent on promoting the supply-side structural reforms. At the beginning of the year, the Ministry of Industry and Information Technology issued a notice on the implementation method for capacity replacement in the steel, cement and glass industry, requiring the prohibition of filing and constructing cement clinker and flat glass for production capacity expansion. In the middle of the year, the State Council issued the "Opinion on Comprehensively Tightening Ecological and Environmental Protection and Fighting the Uphill Battle for Prevention and Control of Pollution". One of the requirements have been to continue to resolve excess capacity, prohibiting the increase in production capacity in many industries including the cement industry. In August 2018, the Ministry of Industry and Information Technology, together with the National Development and Reform Commission, issued the "Notice on Capacity Replacement and the Prohibition of Increasing Production Capacity for Cement and Flat Glass Industry", outlining the new control on capacity, which is conducive to the development of backward production capacity, resolution of the overcapacity situation in the cement industry, and improvement in the supply and demand relationship in the cement industry.

In addition, we have provided extensive occupational training and development opportunities for employees that would allow them to continuously contribute to the Group's long-term achievements. During the year, the electrician team of the Group participated in the Henan Province Building Materials Association Warwick Cup's Welder Skills Competition and came in the 2nd place. The Group's technical achievements being widely recognized in the industry is commendable, but what is worthier of celebration is when, by participating in various competitions, employees of the Group realize their potentials for which they are being commended.

The purpose of this report is to disclose the Group's environmental, social and governance management methods and the overall performance achieved by each measure. We strive to play an important role in the circular economy, sparing no effort in the sustainable management of

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raw materials and by-products to continue to provide high quality products. We would like to thank all departments and teams for their dedication and contribution to the Group’s sustainable development.

4 STAKEHOLDER PARTICIPATION

The Group firmly believed that understanding stakeholders’ expectations is critical to the direction of company development, thus valued the comments and feedback of each stakeholder. Through various channels, the Group has carried out intermittent contact with stakeholders, including clients, employees, community organizations and government organizations, to better understand their visions regarding corporate social responsibility. Based on these consensus, the Group proposed a corporate social responsibility framework that covers four main areas, namely the **environment, product responsibility, manpower and society**, for the sustainable development goals of itself and its stakeholders.

5 OVERVIEW OF THE ENVIRONMENTAL, SOCIAL AND GOVERNANCE PERFORMANCE

Environment

- Obtained the Environmental Management System Certification
 - Obtained the Energy Management System Certification
 - Used high quality coal with low sulfur content
 - Installed electrostatic bag composite dust remover to increase dust removal efficiency in exhaust
 - Used denitrification system to reduce nitrogen oxide emissions
 - Used enclosed belt conveyors to reduce dust
 - Conducted carbon emissions accounting
 - Used industrial by-products of other industries as production resources to build a cross-industry green industry chain
 - Used advanced NSP technology to increase energy efficiency during production
 - Provided the production line with waste heat recovery system
 - Installed water recycling system, implemented the recycling of water resources at the production lines to achieve zero industrial wastewater discharge
-

Product Responsibility

- Obtained Quality Management System Certification
 - Held supplier exchange conferences to promote communication between parties
 - Self-built laboratory obtained Cement Industry Laboratory Certification
 - Regularly allocated testing organizations at provincial-level or above to test product quality
 - Committed to completing investigations regarding complaints received by the relevant department within 24 hours
-

Manpower

- Valued multiculturalism, advocated gender equality
 - In 2018, each subsidiary company implemented a total of 70,992 hours of training with 69,819 participants
 - Electrician team placed 2nd in Welder Technical Skills Competition for the Henan Province Building Materials Association Warwick Cup
 - Obtained Occupational Health and Safety Management System Certification
 - Organized monthly comprehensive safety inspections
 - Hired a third-party agency to conduct occupational health status assessments every three years
 - Provided employees with labour protection equipment
-

Society

- Equipped professionals to establish specialized auditing and inspection organizations
 - Set up a case investigation division to handle all reports
 - Set up a prevention education division to educate the staff by using corruption and bribery cases
 - Established a work contact mechanism with the local auditing and judiciary department
 - Published the whistle-blowing telephone number, e-mail address and instant messenger number to
-

ensure the confidentiality of reporting of incidents

- Planted trees and visited poor and needy families
 - Organized donation activities
 - Actively participated in charitable projects such as local road repairs and building water conservancy projects
-

6 ENVIRONMENT

6.1 EMISSION CONTROL MANAGEMENT

The emissions performance of the cement industry has always been closely followed by all related parties. The old production model has indeed posed a heavy burden on the environment, but it has also created a leading role for the cement industry to improve the environment. The Group has continuously adopted new management approaches and new supporting systems to strive to improve environmental protection quality.

The clinker production process in the cement industry is one of the main sources of atmospheric pollutant emission. Burning coal in the kiln is the main source that causes atmospheric pollutant emissions. Emissions include contaminants such as nitrogen oxide and suspended particulate matter. The Group has always adhered to high environmental protection standards by adopting various measures to reconstruct the production system. High quality coal with low sulfur content were used to reduce sulfide production. Electrostatic bag composite dust removers were installed to increase exhaust air dust removal efficiency. To reduce nitrogen oxide, denitrification systems were used. Enclosed belt conveyors were used to minimize the scattering of dust.

In addition, the Group has reinforced site management during production and maintenance process, for example by covering materials placed in open space, cleaning the roads within the factory area every day and adding dust curtains for materials in the scaffolds. Moreover, the frequency of water spraying has been increased, and sprinklers timers and devices for washing car tires have been installed. The material yard has a fully enclosed design to reduce the emission of dust and air pollution.

In 2018, the Group has comprehensively strengthened the intensity of the environmental protection transformation. Through the transformation, the particulate matter concentration of all production lines has decreased from 20mg in 2017 to 10mg. The Group has installed denitrification systems and bag composite dust removers for all clinker production lines. The emission concentrations of sulfur dioxide, nitrogen oxides and particulate matter have been lower than the national pollutant emissions standard limits. The Group has also set up a central control room to track and inspect production instantaneously to ensure emission levels meet the requirements. During the reporting period, the Group has complied with laws and regulations related to particulate matter, nitrogen oxide and sulfur dioxide emissions, such as:

- Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution;
- Measures for the Administration of Automatic Monitoring of Pollution Sources;

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- Specifications and Test Procedures for Continuous Emission Monitoring Systems of Flue Gas Emitted from Stationary Sources.

Overview of Atmospheric Pollutant Emissions	
Pollutant Emissions ¹	Total Amount
Nitrogen oxide (Tonnes)	9,053
Particulate matter (Tonnes)	1,443

In addition, burning coal in the kiln directly generates greenhouse gas emissions. Other energy consuming equipment also indirectly produces greenhouse gas emissions. As such, the Group has identified carbon emission sources according to the requirements of the national and provincial development and reform commission policy files and subcontractors' verification agencies. The Group has also calculated the carbon emission amount according to the relevant carbon emission policy files and calculating method. Quantifiable carbon reduction goals have been developed and have been carried out during the production process. The effectiveness of carbon reduction would be evaluated regularly whereby problems and imperfections would be analysed and corrected.

Overview of Greenhouse Gas Emissions	
Greenhouse Gas Emission s ²	Total Amount
Scope 1: Direct emissions (from production line) (Tonnes of carbon dioxide equivalent)	16,082,968
Scope 2: Indirect emissions (from electricity consumption) (Tonnes of carbon dioxide equivalent)	701,498
Total amount of greenhouse gas emissions (Tonnes of carbon dioxide equivalent)	16,784,465
Intensity of greenhouse gas emissions (Thousand tonnes of carbon dioxide equivalent/million tonnes of production)	675

The Group has strongly adhered to the principle of recycling to handle waste materials generated during the production process. Hazardous and non-hazardous waste would be identified and segregated. For example, waste rock and soil from mining would be appropriately classified and sold to construction sites to be reused. Recyclable waste material such as steel scrap produced from equipment replacement would be regularly collected and handled by subcontracted recycling companies. Hazardous waste generated at the production site mainly came from chemicals used for machinery maintenance. Under certain circumstances, chemical waste produced from large production processes would be used again as lubricating material

¹ Pollutant emissions amount is based on the actual measurement of the on-site monitoring system at the factory.

² The Group calculated the greenhouse gas emissions according to the *Greenhouse Gas Emissions Calculation Method and Reporting Guide for China's Cement Production Companies (Trial)*. Given that Henan and Liaoning's production accounts for a much higher proportion than other provinces, this table only reports the greenhouse gas emissions of the Group's businesses in these two provinces.

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for on-site equipment and machinery. Other chemical wastes that could not be reused would be appropriately stored and handled according to local laws and regulations. The relevant laws and regulations include:

- Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste;
- Standard for Pollution on the Storage and Disposal Site for General Industrial Solid Wastes

Waste Data Overview			
	Total Amount	Amount Recycled	Recycle Rate
Hazardous waste (Tonnes)	77.18	75.94	98%
Non-hazardous waste (tonnes)	3147.95	3052.7	97%

6.2 USE OF RESOURCES

Not only has the Group continually improved its own environmental protection performance, it has also played a key role in building a green industry chain between industries by making good use of the unique nature of the industry and using industrial by-products and wastes from other industries as production resource. The Group used its own production line to absorb fly ash from power plants, slag from steel plants, sulfuric acid slag and industrial by-products such as limestone tailings from chemical plants to use as production resources.

As limestone is the main raw material for cement, the Group has set up factories near the limestone mining source and sales channels to reduce resources used for transportation of raw materials and finished products. The Group has obtained necessary licenses for limestone mining, and has satisfied the mining conditions and procedural requirements of paying mine resource compensation and taxes. This allowed the Group to carry out mining work in a manner that was compliant to the existing laws and regulations in the PRC.

To promote energy conservation, all clinker production lines have been equipped with advanced NSP technology to reduce energy consumption and carbon pollutant emissions. The energy usage of NSP technology was 7%-15%³ more efficient than traditional suspension pre-heater systems. Moreover, by increasing efficiency and reducing coal consumption, the Group has saved a substantial amount on cost and contributed to a cleaner production.

To further reduce the raw materials used during production, the Group has equipped most production lines with residual heat recovery system. The heat generated from the clinker production process would be captured and recycled through the heat recovery system for use in the cement production process. The overall energy needed to operate was reduced. During the reporting period, the Group generated electricity 683,900 MWh through the system, which was equivalent to saving 84,000 tonnes of standard coal and reducing 225,000 tonnes of CO₂ emissions.

During the reporting period, the main sources of energy consumption was from electricity usage and coal consumption during the production process, and petrol and diesel used for

³ Reference was made to the Climate Technology Centre & Network · <https://www.ctc-n.org/products/new-suspension-preheaters-burning-system> accessed July 11, 2018.

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transportation. The table below shows the energy consumption of the Group during the reporting period.

Overview of Energy Consumption of the Group ⁴	
Coal (MWh)	17,856,105
Petrol (MWh)	815
Diesel (MWh)	30,513
Liquified petroleum gas (MWh)	61
Natural gas (MWh)	823
Electricity (MWh)	1,166,530
Total energy consumption (MWh)	19,054,846
Energy intensity ('000 Mwh/Million tonnes production)	766

As freshwater is extremely valuable, the Group has adopted water saving management policies by installing water recycling systems. Water resources at the production line would be treated and reused. In addition to being used in the production process, to achieve zero industrial wastewater discharge, recycled water was also used for dust control and irrigation in the surrounding areas of the production site. For sewage that must be discharged, the Group has strictly adhered to the requirements on the sewage discharge permit.

During the reporting period, the Group has treated wastewater in accordance with legal standards, and has achieved zero industrial wastewater discharge through full reuse of 8,456,730 m³ of recycled wastewater.

Overview of Water Consumption	
Total water consumption (m ³)	1,929,587
Intensity ('000 m ³ /Million tonnes production)	71

During the reporting period, the amount of material used for product packaging is as follows;

Overview of Amount of Packaging Material Used	
Total amount of packaging material (tonnes)	8,319
Intensity of packaging material usage ('000 tonnes/Million tonnes production)	0.31

6.3 ENVIRONMENT AND NATURAL RESOURCES

In 2018, the Group and all subsidiaries of the Group have passed the four-in-one certifications for quality, environment, occupational health and safety management systems and products. All clinker production lines have passed the Energy Management System Certification. The Group

⁴ Given that Henan and Liaoning's production accounts for a much higher proportion than other provinces, this table only reports the energy consumption of the Group's businesses in these two provinces.

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has established coal, energy, water and gas conservation management policies and measures, and have set incentives to encourage repair and reuse, and to conserve energy by technological transformation.

The Group has placed great importance on promoting and educating employees on environmental protection in regards to daily work tasks and production by providing seminars and training on environmental protection periodically. A temperature setting reminder for the air conditioning system has been posted in the office to promote energy conservation. Employees were required to shut down equipment such as their computers, lights and printers, and spot checks would be carried out. To save paper, the Group promoted a paperless office culture by establishing electronic files. Applications and reports would have a special approval system to reduce paper archives. Signs for food wastage and conservation have been posted in the factory cafeteria to remind employees not to waste precious food.

The Group has actively improved its environmental protection performance within the industry through various aspects, such as transforming hardware to increase production efficiency and enhancing its software by promoting environmental protection awareness.

7 PRODUCT RESPONSIBILITY

7.1 SUPPLY CHAIN MANAGEMENT

As some of the materials procured have been derived from industrial by-products and waste, the Group's sustainable procurement policy has effectively aided various industries in improving waste material management and solving environmental and social problems in the supply chain.

All material bidding of the Group would be subject to the supervision, inspection and assessment of the Group's management committee, legal affairs department, control department, finance department, audit department and other professional management departments. The control division of the Group is the main inspection body during the bidding procedures and is responsible for the Group's inspection work. During the procurement process, the Group would make supplier selections through bidding procedures based on quality, pricing, delivery time, service quality, reliability, and the geographical location. A closer proximity to the Group's operational site would enable better control on delivery time and reduce the environmental impacts caused by transportation. The Group would regularly evaluate suppliers by assessing the quality, timeliness, after-sales service and other considerations such as suppliers' track record of compliance with relevant environmental and social laws.

The Group would also regularly host networking events for suppliers to encourage exchange and trust between each party, strengthen partnerships and minimize risks caused by the supply chain.



The Group's Materials and Equipment Department hosted a work communication event in Yuzhou

7.2 QUALITY AND COMPLIANCE MANAGEMENT

The Group has gained good reputation from customers with product quality and service. The Group followed the principle that customers and service come first, and strongly believed in the production and sale of high quality products. Unified, open and fair publicity strategies were used. Based on the ISO 9001 quality management international standards, the Group has established a comprehensive framework to manage quality output of the products, and has obtained the Quality Management System Certification.

The Group has a dedicated quality control department responsible for monitoring the production process and inspect the quality output of the cement products. The laboratory has been awarded the Cement Enterprise Laboratory Certificate. From inspecting suppliers to checking the requirements on the quality and health and safety of the products, the quality control department ensures the products have met all relevant laws and customer requirements. The laboratory would test the quality safety of the products and raw materials according to various requirements. The finished products were inspected and tested in accordance to a variety of national standards, including compressive strength and cement chemical analysis. The Group has also allocated testing organizations at provincial-level or above to regularly carry out product quality tests to verify the accuracy of the test results performed by the laboratory, and to ensure that the product inspection information is reliable and effective.

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Shangqiu CPPCC vice chairman Liu Mingliang visited the smart factory at the Shangqiu office: Shangqiu CPPCC vice chairman and Industry and Information Technology Committee chairman Liu Mingliang led a group of more than 30 people from relevant committees and districts in Shangqiu to visit and inspect the construction and implementation of smart factories in the Shangqiu office.

The Group has formulated a *Sales Customer Management Method* which explains the content of collecting customers' personal information and details the departments that have the right to collect and use customers' personal information. The level of customers' information given to employees would correspond to the management level of the employee. Customers' personal information would be used only for business development, internal analysis and customer relationship contact by business related personnel and is strictly confidential.

The Group has actively sought to improve the quality of its products and services through regular on-site visits, information exchange on the Internet, communicating with customers through telephone enquiries and collecting customer feedback. As an active approach to quality management, customer satisfactory surveys were initiated to help the Group improve the quality of its products and services. Contact method for complaints have been posted at the place of sales, online promotion platforms, product manuals and product packaging labels. Responsible departments would collect customer feedback on a monthly basis, consolidate and analyze the information and follow up with any complaints. In addition, the Group has established emergency response plans for customer complaints at all levels, and has set up a customer service hotline. Upon receiving complaints, the Group would immediately arrange for professionals to handle complaints and follow-up. Responsible departments would complete the investigation within 24 hours and convene with relevant departments to consult and resolve the issues.

The Group supports benign competition, and has ensured that all aspects from raw material procurement to product sales are fair, complies with requirements and required by law. The Group has refused to promote monopoly by anti-competitive behavior. A recall procedure has been established during the production process, requiring products that do not meet the requirements to be immediately recalled and investigated for improvement. The Group has strictly controlled the quality and remained committed to excellent after-sales service. The Group has a dedicated department responsible for monitoring intellectual property and

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customer information and has ensured that the Group abides to policies and laws related to information confidentiality and intellectual property. During the reporting period, the Group recorded no recalled products relating to health and safety issues and no substantiated complaints.

8 MANPOWER

8.1 EMPLOYMENT AND RESPECT FOR LABOUR RIGHTS

The Group's employment culture focused on enhancing employees' work satisfaction and the Group's competitiveness in the long run, creating a diverse and respectful work environment. Diversity has effectively promoted innovative ideas and experience sharing within the company. The Group has placed great importance on diversity, respect for gender, ethnicity, age, religion, and has advocated a workplace that is inclusive and fair to all employees. Female employees account for a small proportion in the cement industry, hence the Group emphasized gender equality and has provided both genders equal opportunities for employment, promotion, career development and remuneration.



The Group hosted fun activities on Women's Day

The recruitment process focused on hiring the most suitable individual, regardless of gender, age or ethnic background. In order to make full use of the incentive function of salary in retaining and using talents, the Group would initiate the salary adjustment mechanism according to external and internal factors that affect the actual value of the employees' salary. The remuneration system would take into account the market standards comparable to other operating companies within the cement industry, and would be set based on individual performance and the Group's overall financial results. The Group's various managerial positions would be selected by external recruitment or internal selection. In the event that a position is available due to an addition of a role, a demotion or a resignation, an internal selection would typically be carried out initially before performing an external recruitment.

The Group's recruitment and employment procedures strictly complied with local related laws and regulations. The Human Resources Department had been responsible for overseeing employment issues, performing background screening and regular checking to prevent child and forced labour within the Group's operational boundaries. All units have been set up with an employee feedback collection box that accepts employees' identified or anonymous comments. A meeting would be held to conduct research, processing and replies. The Group had also paid endowment insurance, medical insurance, work injury insurance, unemployment

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insurance, maternity insurance and housing provident funds for its employees. The Group focused on providing employees with fair compensation and remuneration, reasonable working hours and rest periods, career development opportunities and a friendly working environment. To enhance good long-term career development for employees, a variety of employment training and external training opportunities were provided.

To promote company culture and employees’ interactions, the Group had organized a number of activities for employees. Team lunches, cooking classes, recreational sports, cultural activities and family gatherings were arranged to boost work-life balance and the physical and mental well-being of employees. To strengthen employees’ sense of belonging and honor, in addition to salary, the Group would provide certain allowances and benefits to the employees based on the Group’s financial situation, social responsibility and social customs. These allowance and benefits included on-the-job allowance, education allowance, summer heat subsidy, washing subsidy, work environment subsidy, holiday welfare, social insurance and paid vacations. During Mid-Autumn Festival and Spring Festival, the Group would provide holiday subsidies in cash or equivalent to all employees.



Celebrating 1st of May with cultural and sports competitions



Dumpling wrapping for Winter Solstice



New Year Gala

The Group has strictly complied with relevant employment laws including the *Labour Law of the People’s Republic of China*, and there have been no cases of prosecution for violation of the relevant employment laws during the period.

Total number of employees by gender at the end of the period

Male	5,405
Female	2,060

Total number of employees by age group at the end of the period

Age 18-30	1,468
Age 31-45	3,005
Age 46-60	2,935
Age 61 and above	57

Average employee turnover rate by gender (Monthly average employee turnover rate for the year)

Male	1%
Female	1%

Average employee turnover rate by age group (Monthly average employee turnover rate for the year)

Age 18-30	2%
Age 31-45	1%
Age 46-60	1%
Age 61 and above	5%

8.2 SAFETY AND HEALTH

Not only maintaining a safe working environment is the responsibility of the Group, healthy workforce would be a huge benefit to the long-term development of the Group. The Group has established an occupational health and safety system and has obtained relevant certifications. To promote the safety-first culture, the Group has implemented the health and safety performance management process to create a healthy and safe working environment for employees.

The Group has a specialized unit that is responsible for occupational health and safety matters. The production unit has organized monthly comprehensive safety inspections and safety issues would be rectified within a certain time limit. Based on relevant national occupational health laws and regulations, the Group has hired a third-party organization to carry out occupational health status assessments every three years, and conduct occupational hazard testing work every year. The Group would provide occupational health and safety educational training to raise employee awareness. The production unit would put up a dangerous operation notification card in high-risk areas of the workplace to identify and notify employees of the high-risk tasks in the employees’ work procedures. For example, warning signs on noise and dust would be placed to remind employees of operations and equipment that could eliminate danger. The Group has provided protection equipment such as hard hats, protective suits, construction boots for employees. Safety rope and other equipment and tools have been provided for work at high places. In the summer, heatstroke prevention, cooling medication and other first aid supplies would be given. To ensure employees’ health, the Group would carry out regular occupational disease examination to identify potential problems early.

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Annual occupational health examination

During the reporting period, training and instruction for occupational health and safety were provided to employees. The main objective was to raise employee awareness on operational procedures and to minimize the risk of accidents and injuries. To further enhance employees’ safety awareness, the Group has organized a variety of safety education activities, such as “Safe Production Month” and “Fire Drill”. Through these activities, employees’ awareness has been effectively aroused.



“Safe Production Month” event launching ceremony and oath signing event



“Spread the Firefighting Knowledge, Increase the Emergency Response Ability” Fire drill

The Group has complied with relevant safety laws and regulations such as the *Law of the People’s Republic of China on Work Safety* and *Law on the Prevention and Treatment of Occupational Diseases*. There have been no cases of prosecution due to violation of laws related to occupational safety during this period. Through consistent training and strict compliance with health and safety laws and regulations, the Group has achieved zero accidents and zero casualties in the reporting year.

8.3 EDUCATION, TRAINING AND CAREER DEVELOPMENT

The Group firmly believes that the growth of the Company is attributed to the importance placed on the employee’s development. One of the responsibilities of all employees at managerial level would be to provide on-the-job training, guidance, job skills and business quality to their subordinates. Managers would make reasonable judgement on the training content and time, and to assist and supervise subordinates to share, apply and repeatedly apply their training knowledge and skills in practical work. Newly hired employees would attend pre-job training organized by the hiring unit. The main content of the training includes introduction of the Group and units, company culture, management system, employee regulations, labour safety, policies, and job responsibilities. The Group has encouraged and supported employees to attend various academic training. Academic training subsidized by the government would be reviewed by the Human Resources Department.

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The Group focused on developing employee capabilities through diverse technical and managerial training courses and provided extensive training and career development programs. In 2018, each subsidiary implemented a total of 70,992 hours of training with 69,819 participants, covering all areas of work such as direct purchase supervisor training, a 5-in-1 system comprehensive training on product quality, environment, energy, occupational health and safety and product certification, as well as official document and reporting method training. During the period, the Group has participated in the Henan Province Building Materials Association Warwick Cup’s welder skills competition. Tianrui Cement placed the 2nd in the electrician group, with seven contestants that entered the top 15 in the electrician and welder profession. The Group’s human resources strategy focused on identifying and developing high standard talents. As such, managers would assess employee performance and potential based on the Group’s standards and encourage employees to participate in appropriate trainings.



5-in-1 management system training conference



The 1st Central Control Operator and Labour Skills Competition

Percentage of employees that attended training per month by gender and Average number of training hours per employee per month

	<u>Percentage of employees that attended training per month</u>	<u>Average number of training hours per employee per month</u>
Male	81%	0.77
Female	66%	0.82

9 SOCIETY

9.1 ETHICS, INTEGRITY AND ANTI-CORRUPTION

Integrity and morals is the key foundation for winning trust and success. The Group has established anti-corruption policies, monitored business operations and has been committed to preventing bribery and corruption. The Group has developed a code of conduct for the employees, which specifies various job behaviours and anti-corruption and bribery work practices. Employees are not allowed to receive gifts from related parties. Gifts accepted would be submitted to the relevant department by the registration unit. Professional personnel would set up a specialized audit and supervision organization whereby the supervisor would be appointed to be responsible for internal review. An internal case investigation division has been set up to review all reports and set punishments based on rules and regulations. The Supervision Committee has also set up an education prevention division to educate the staff based on cases

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of corruption and bribery. The Group has also hired independent non-executive directors to supervise the company's operations.

The Group has established a working relationship mechanism with local auditing and judicial departments to observe and report crimes like bribery, extortion, fraud and money laundering. By publishing a report phone number, e-mail and WeChat number, the Group has also set up a reporting policy that would allow employees to report any possible corruption cases internally through confidential and comfortable reporting channels.

The Group has strictly complied with relevant anti-corruption and bribery laws, and there have been no cases of prosecution due to violation of *Regulations of the People's Republic of China for Suppression of Corruption* and other relevant laws.

9.2 COMMUNITY PARTICIPATION

As business grows, the Group have also been committed to avoid any disturbance to nearby communities during its operations. The Group strived to contribute back to the community and to become a corporate citizen by extending care to the community and assuming social responsibility.

The Group participated in public welfare activities and work to support the poor, creating a stable and harmonious community. In 2018, the Group organized tree planting activities and visits to poor families, which promoted mutual assistance among employees. In addition, due to the losses caused by the typhoon Rumbia, the Group organized donation activities to help the communities in need. Moreover, the Group has been committed to promoting a green office culture in the office, production line and employee living quarters.



Recreational activities for Mother's Day

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Tree planting event

All units of the Group have established good partnership relations with relevant departments of the local streets, communities and government departments. Strong support has been shown to relevant departments in arranging employment, tax payment and poverty relief work. The Group has also actively participated in public welfare activities such as local road repairs and water conservancy projects. More than 1,500 hours have been dedicated to volunteer work during the period.

10 AWARDS AND RECOGNITION

Awards/Achievement Titles	Issuing Authority
“Hongchao Information Technology Cup” National Cement Chemical Analysis Grand Prize	National Quality Supervision and Testing Center for Cement
2017 Model Taxpayer	CPC Guangshan County Committee Guangshan County People’s Government
2017 Top 10 Taxpaying Company	CPC Wensheng District Committee, Wensheng District People’s Government
2017 Liaoning Province Cement Product Quality Index Grand Prize	Liaoning Province Product Quality Supervision Testing Institute
Liaoyang City Private Company Comprehensive Strength Top 20	CPC Liaoyang City Committee, Liaoyang City People’s Government
Liaota Company awarded the “Hongchao Technology Cup” for the 16 th National Cement Chemical Analysis Full Prize	National Quality Supervision and Testing Center for Cement
2017 Top 10 Taxpaying Company	CPC Wensheng District Committee, Wensheng District People’s Government
2017 Liaoning Province Cement Product Quality Index Grand Prize	Liaoning Province Product Quality Supervision Testing Institute
Liaoyang City Private Company Comprehensive Strength Top 20	CPC Liaoyang City Committee, Liaoyang City People’s Government
May 1 st Labour Medal	Henan Federation of Trades Union
Nanyang City Model Home for Staff	Nanyang City Model Home for Staff

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Poverty Alleviation Banner	Baitugang Dazhuang Village Villagers Committee
2nd Place for technical transformation of ABB frame circuit breaker under voltage trip	China Building Materials Federation, China Mechanics, Metallurgy, Building Materials
Shangqiu City Liangyuan District Advanced Taxpaying Company	CPC Shangqiu City Liangyuan District Committee, Liangyuan District People's Government
Mr. Zhang Xiao Yang of the company named the Safe Production Advanced Worker of the Year 2017 by Shangqiu City	Shangqiu City People's Government Safe Production Committee
Pioneer Workers	China Federation of Trade Unions
Xiao County "Advanced Primary Level Women's Organization"	Xiao County Women's Federation
2017 Safe Production Work Advanced Unit	Xiao County Economic Development Zone Management Committee
Suzhou City 1 st of May Labour Certificate	Suzhou City Federation of Trade Unions
Suzhou City Industry "Top 10 Taxpaying Companies"	Suzhou City People's Government
2017 Industrial Companies Comprehensive Assessment "2 nd Place"	Xiao County People's Government
Outstanding Company in Investment in Technological Transformation	Dengfeng City People's Government
Henan Cement Clinker Quality Competition 3 rd Place	Henan Province Building Materials Industrial Association
Henan Province Smart Factory	Henan Province Industrial and Information Committee
Safe Production Advanced Unit	Yuzhou City Industry Cluster Management Committee
Yuzhou City Outstanding Industrial Company	Yuzhou People's Government
2018-2019 Key Protection Company	Yuzhou People's Government
Passed the 5-in-1 Management System Inspection Assessment	CQM
Successfully passed the transformation project for ultra-low emissions for environmental protection	Henan Cement Association and Provincial Building Materials Design Research Institute
Zhongmou County 2017 Companies with Outstanding Contributions to Economic Development	Zhongmou County People's Government
Outstanding Suppliers	China Railway Material Trade Group Wuhan Company Limited
Outstanding Companies in Industrial Economic Development	Zhoukou City Municipal Party Committee, City Government
Outstanding Non-public Company	Zhoukou City Chuanhui District Committee, District Government
Ruzhou City Three Stars Company	CPC Ruzhou City Committee, Ruzhou City People's Government
Tax Contribution Advanced Company	CPC Ruzhou City Committee, Ruzhou City People's Government

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Technological Investment Advanced Company	CPC Ruzhou City Committee, Ruzhou City People's Government
Environmental Protection Investment Advanced Company	CPC Ruzhou City Committee, Ruzhou City People's Government
Safe Production Advanced Company	Ruzhou City People's Government
Ruzhou City Statistics Advanced Company	Ruzhou City People's Government
Ruzhou City Industry Cluster Zone Upgraded Work Advanced Company	Ruzhou City People's Government
Pingdingshan City Outstanding Non-public Company	Pingdingshan City Non-public Economic Work Leader Group
Outstanding Company in Helping with Poverty Relief	CPC Ruzhou City Committee, Ruzhou City People's Government
Work Pioneer	Xinxiang City Federation of Trades Union
Work Pioneer	All-China Federation of Trades Union
2017 Taxation Work Collective Third Class Merit	CPC Weihui City Committee, Weihui City People's Government
Henan Cement Clinker Quality Competition 3 rd Place	Henan Province Building Materials Industrial Association
Henan Province Smart Factory	Henan Province Industrial and Information Committee
2017 Top 10 Taxpaying Company	CPC Wensheng District Committee, Wensheng District People's Government
2017 Liaoning Province Cement Product Quality Index Grand Prize	Liaoning Province Product Quality Supervision Testing Institute
Liaoyang City Private Company Comprehensive Strength Top 20	CPC Liaoyang City Committee, Liaoyang City People's Government
2017 Henan Province Cultivating Green Factory	Henan Province Industrial and Information Committee
Safe Production Advanced Unit	Yuzhou City Industry Cluster Management Committee
Yuzhou City Outstanding Industrial Company	Yuzhou People's Government
2018-2019 Key Protection Company	Yuzhou People's Government
Passed the 5-in-1 Management System Inspection Assessment	CQM
Successfully passed the transformation project for ultra-low emissions for environmental protection	Henan Cement Association and Provincial Building Materials Design Research Institute
Outstanding Suppliers	China Railway First Group Co. Limited
Outstanding Companies in Industrial Economic Development	Zhoukou City Municipal Party Committee, City Government
Outstanding Non-public Company	Zhoukou City Chuanhui District Committee, District Government
Product Quality Integrity Model Unit	Xiao Fei Ri Bao Website
Henan Province 1 st of May Labour Award	Henan Province Federation of Trades Union
Zhengzhou Outstanding Company for Transformation and Innovation	Zhengzhou City Entrepreneur Association, Zhengzhou City

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	Entrepreneur Federation, Zhengzhou City Industrial Federation
Outstanding Company in the National Building Materials Industry Quality Certification Event	China Building Materials Federation
Smart Manufacturing Experimental Unit in the Building Material Industry	Information Centre of China Building Materials Industry
Henan Province Green Factory	Henan Province Industrial and Information Committee
Over 10 Million Yuan Taxpaying Company	CPC Yingkou City Bayuquan District Committee, Yingkou City Bayuquan District People's Government
“Liaota Company awarded the “Hongchao Technology Cup” for the 16 th National Cement Chemical Analysis Full Prize	National Quality Supervision and Testing Center for Cement
2017 Liaoning Province Cement Product Quality Index Grand Prize	Liaoning Province Product Quality Supervision Testing Institute
Liaoyang City Private Company Comprehensive Strength Top 20	CPC Liaoyang City Committee, Liaoyang City People's Government
Awarded the 2018 Panjin City Energy Conservation Work Advanced Unit	Panjin Energy Conservation Monitor Center

11 VISION

The Group is one of the twelve national cement industry leaders receiving significant support from the government, and one of the national cement industries centralized and reorganized in Central China appointed by the Ministry of Industry and Information Technology. To be able to receive support from the Chinese government such as tax incentives, special projects or financing approvals, the Group shall take advantage from the policies and its own advantages. Through internal structure adjustments, strengthening refined management, optimizing production process to increase production efficiency, promoting regional market integration and collaboration, seizing the new profit growth point and maintaining and enhancing the advantage of cost and size, the Group hopes to solidify the leading market position in Henan and Liaoning.

The Group shall continue to strengthen pollution prevention and ecological construction, and expand the achievements of the Blue Sky Defense War by strengthening water and soil pollution prevention. The environmental protection policies have an important impact on the cement industry as they promote the elimination of backward production capacity and increase industry barriers, thus improving the industry supply and demand situation. The strict implementation of environmental protection standards will undoubtedly eliminate backward production capacity. The withdrawal of production capacity and implementation of staggering peak production will continue to improve the supply and demand relationship in the cement market.

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A	Environment	Section
<i>Scope A.1</i>	Emissions	6.1
KPI A.1.1	Types of emissions and relevant emissions data	6.1
KPI A.1.2	Total amount of greenhouse gas emissions and intensity	6.1
KPI A.1.3	Total amount of hazardous waste produced and intensity	6.1
KPI A.1.4	Total amount of non-hazardous waste produced and intensity	6.1
KPI A.1.5	Description of emissions reduction measures and results	6.1
KPI A.1.6	Description of hazardous and non-hazardous waste handling methods, emissions reduction measures and results	6.1
<i>Scope A.2</i>	Use of resources	6.2
KPI A.2.1	Direct and/or indirect energy consumption and intensity by type	6.2
KPI A.2.2	Total amount of water consumption and intensity	6.2
KPI A.2.3	Description of effective use of energy plan and results	6.2
KPI A.2.4	Description of problems with water source, enhance water usage plan and results	6.2
KPI A.2.5	Total amount of packaging material used for finished products and per unit of production	6.2
<i>Scope A.3</i>	Environment and Natural Resources	6.3
KPI A.3.1	Description of impact the business has on the environment and natural resources, and management measures taken	No issues that had major impact on the environment and natural resources during the period
B	Society	
<i>Scope B.1</i>	Employment	8.1
KPI B.1.1	Total number of employees by gender, employment type, age and geographical location	8.1 (Only data for gender and age group are disclosed)
KPI B.1.2	Employee turnover rate by gender, age and geographical location	8.1 (Only data for gender and age group are disclosed)
<i>Scope B.2</i>	Health and Safety	8.2
KPI B.2.1	Number and percentage of deaths caused by work	8.2
KPI B.2.2	Number of days lost caused by work injury	8.2
KPI B.2.3	Description of occupational health and safety measures taken, and relevant execution and monitoring methods	8.2
<i>Scope B.3</i>	Development and Training	8.3
KPI B.3.1	Percentage of employees that attended training by gender and employment type	8.3 (Only data for gender is disclosed)
KPI B.3.2	Average number of training hours per employee by gender and employment type	8.3 (Only data for gender is disclosed)
<i>Scope B.4</i>	Labour Standards	8.1
KPI B.4.1	Description of measures taken to review recruitment practices to avoid child labour and forced labour	8.1

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KPI B.4.2	Description of steps taken to eliminate the situation after discovery of a violation	No violations
<i>Scope B.5</i>	Supply Chain Management	7.1
KPI B.5.1	Number of suppliers by geographical locations	Not disclosed
KPI B.5.2	Description of practices for hiring suppliers, the number of suppliers, and the execution and monitoring methods of the relevant practices	7.1
<i>Scope B.6</i>	Product Responsibility	7.2
KPI B.6.1	Percentage of sold or delivered products recalled because of safety and health reasons	7.2
KPI B.6.2	Number of complaints received regarding products and services, and solution	7.2
KPI B.6.3	Description of practices related to protecting and ensuring intellectual property	7.2
KPI B.6.4	Description of quality inspection process and product recall process	7.2
KPI B.6.5	Description of consumer data protection and privacy policy	7.2
<i>Scope B.7</i>	Anti-corruption	9.1
KPI B.7.1	Number of corruption cases filed by the issuer or employees during the reporting period, and the outcome of the proceedings	No corruption lawsuit
KPI B.7.2	Description of preventive measures and reporting methods, and related execution and monitoring methods	9.1
<i>Scope B.8</i>	Community Participation	9.2
KPI B.8.1	Focus on scope of contribution	9.2
KPI B.8.2	Resources used on focused area	9.2