



HEALTH
AT SOUTH32

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HEALTH

The health of our people and communities is of great importance to us. Through our Care Strategy we focus on workplace inclusivity, well-designed work and continuous improvement.

An inclusive workplace is one where we all feel comfortable speaking up. We ask for, offer and accept help, and we encourage each other to challenge the way we do things. When challenges arise we address and resolve them together.

Well-designed work is about making sure we have people with the right qualifications and experience, the correct tools and processes, and plan all high risk work so that the work we complete does not pose health risks to our employees and contractors or the community.



We will continuously improve our workplace to support the mental and physical wellbeing of our employees, contractors and host communities by sharing our lessons learned within our teams and across the business.

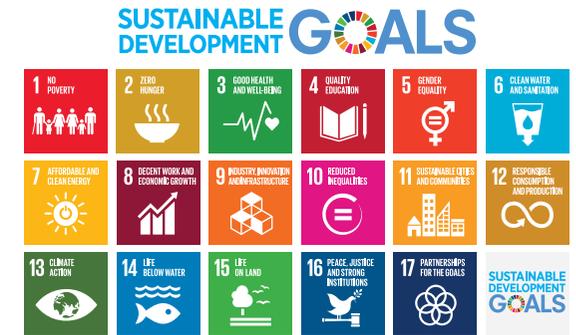
WHAT WE DO TO KEEP OUR PEOPLE HEALTHY

We have mandated fit-for-work programs across all operations to ensure our people are ready for the tasks they have to perform and that they will not be adversely impacted at work. We have comprehensive medical assessments, fatigue management plans and a risk-based drug and alcohol program to both minimise health impacts on our people and to minimise the likelihood of incidents, injury and illness across our operations.

Potentially harmful agents and health risks at our workplace include potentially carcinogenic substances (silica, diesel particulate matter, lead, nickel, and coal tar pitch volatiles), other airborne contaminants (coal dust, fluoride, and manganese dust) and exposure to noise. Musculoskeletal disease and noise-induced hearing loss remain the most common health impacts experienced by our workers.

Our focus is on reducing the number of workers exposed above Occupational Exposure Limits (OEL) by controlling emissions at the source. We set internal OELs for the most prominent potentially harmful agents in our workplaces. Our operations are required to prevent worker exposure from exceeding South32 and legislated OELs. If airborne levels exceed an OEL, respiratory protective equipment is mandated for the affected workers and we complete fit-testing to ensure the protection is adequate.

“ We will continuously improve our workplace to support the mental and physical wellbeing of our people and communities.”



Our Health programs support the Sustainable Development Goals

South32 supports the United Nations (UN) Sustainable Development Goals (SDGs). The United Nations 2030 Agenda for Sustainable Development defined 17 SDGs in September 2015 that seek to address the world's greatest challenges. The SDGs build on the work undertaken through the Millennium Development Goals but have a greater focus on the involvement of the private sector. South32 plans align with the SDGs. The key to a successful result is working with stakeholders to develop and implement actions that contribute to sustainable development.

Our approach to health is consistent with the third Sustainable Development Goal, Good Health and Wellbeing, which seeks to ensure healthy lives and promote wellbeing at all ages.



The targets under SDG3 that South32 contribute to include:

- By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
- By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being
- By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases



CASE STUDY

Developing new technology to reduce diesel exhaust emissions

Diesel exhaust emissions are considered a health hazard. Diesel exhaust emissions monitoring and maintenance programs are an important control to ensure emissions are managed at the source. To improve the reliability of emissions measurement, the maintenance team at Illawarra Metallurgical Coal in Australia teamed up with the University of Wollongong to develop reliable exhaust emissions testing technology. As underground operations rely heavily on equipment fuelled by diesel, it is critical that we have reliable exhaust monitoring technology to identify any engine problems early so that engine maintenance can be performed.



CASE STUDY

Occupational exposure limits

Following the re-emergence of coal workers' pneumoconiosis in Queensland, the Queensland Department of Natural Resources and Mining (DNRM) commissioned a Monash University review into the respiratory components of the Queensland Coal Mine Workers' Health Scheme in July 2016. South32 has conducted a review of the internal requirements and the systems in place at our coal operations, with consideration to the findings of the Monash University review.

The review found that our health surveillance programs do not have the design failures which were identified in the Monash University review. We are managing worker exposure below our internal OEL for respirable coal dust of 2mg/m³, which is aligned to the South African regulations and is below the limits set in Queensland (3 mg/m³) and New South Wales (2.5 mg/m³).

HEALTH PERFORMANCE

Health performance, measured according to the OSHA⁽¹⁾ guidelines, is part of the Sustainability Key Performance Indicators (KPIs) of Executive remuneration. Our employee occupational illness and occupational exposure performance is outlined below.

OCCUPATIONAL ILLNESS

During FY17, it was found that 11 cases of noise-induced hearing loss for the Australia region had not been reported in FY16. Taking these cases into account, the revised Total Recordable Illness Frequency (TRILF)⁽²⁾ for FY16 is 1.29 (from 1.07).

Our FY17 TRILF was 1.26, which is a slight improvement on the restated FY16 TRILF. This is rated as 'meets threshold' within our Sustainability KPIs.

There was a 25 per cent increase in employee occupational illnesses per million hours worked for FY17 compared to FY16, from 40 illness cases in FY16 to 50 cases in FY17. The majority of this increase is attributed to musculoskeletal disease, from 23 cases in FY16 to 31 cases in FY17 across the company. Our sites facilitate medical treatment and, where necessary, support the rehabilitation of workers who have suffered from a work related injury or illness.

Table 1 Employee Occupational Illness Frequency

	% Change from FY16
Total employee occupational illnesses	25% increase
Employee musculoskeletal disease	40% increase
Employee noise-induced hearing loss	41% decrease

(1) To ensure that incident classification definitions are applied uniformly across our workforce, we have adopted the United States Government Occupational Safety and Health Assessment (OSHA) guidelines for the recording and reporting of occupational injuries and illnesses.

(2) Total Recordable Illness Frequency (TRILF): The sum of total occupational illness x 1,000,000 ÷ actual hours worked, for employees and contractors. Stated in units of recordable illnesses per million hours worked.

OCCUPATIONAL EXPOSURES

In FY17, there was a significant reduction in the number of workers potentially exposed to an airborne contaminant or carcinogen. The reduction has been driven by a combination of projects to reduce exposure at the source and an improved understanding of our exposure risk profiles. The decrease in exposures to carcinogens has been rated as 'meeting stretch' performance within our Sustainability KPIs.

Table 2 Occupational Exposures

Occupational Exposures	% Change from FY16
Potential exposures to carcinogens	47% decrease
Potential exposures to airborne contaminants	24% decrease
Potential exposures to noise	10% increase

WELLNESS

We have a number of programs in place to help our employees focus on their own health and wellbeing so that when they are at work they can be present, alert and engaged.

We recognise that a person's wellbeing can be related to factors outside the workplace and we provide all employees and their family members with access to an external employee assistance provider. These services support, guide and coach people to achieve and maintain their own wellbeing and effectiveness, while building confidence and capability.



CASE STUDY

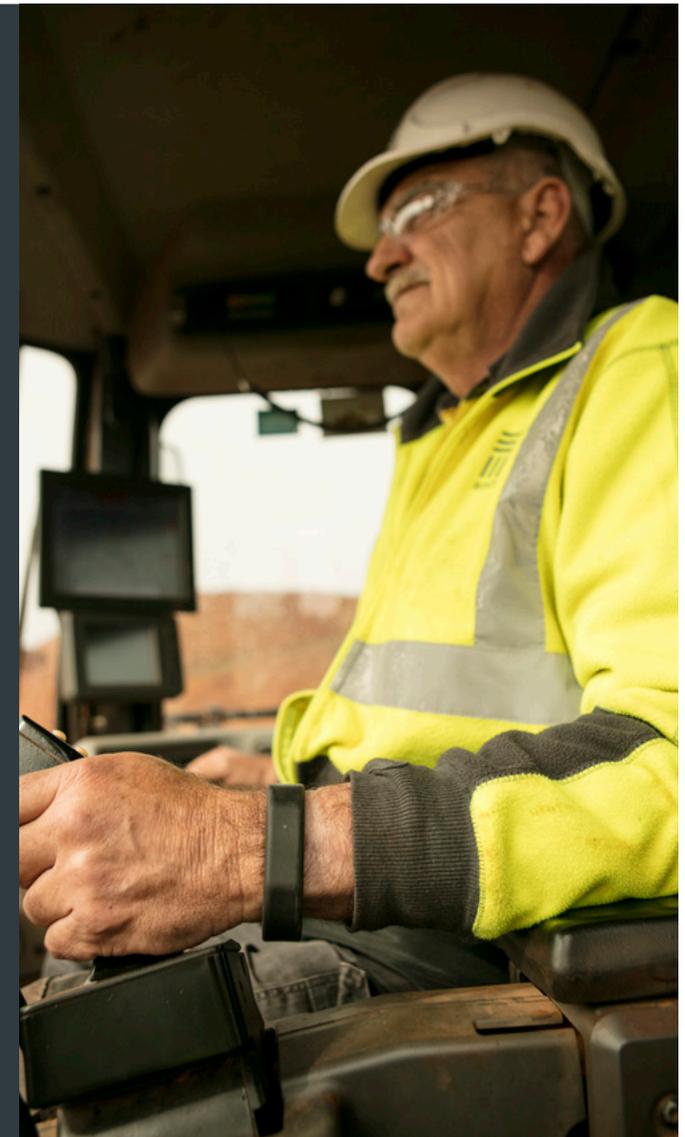
Technology improves fatigue management

Fatigue is a hazard which can lead to safety and health incidents. To manage the risks associated with fatigue, Worsley Alumina in Australia has trialled Readiband™, a fatigue risk monitoring technology to proactively manage fatigue risk, reduce fatigue related safety incidents and improve the overall wellbeing of our people.

Readiband™ is a scientifically validated wrist-activity monitor. The data integrates with the Safety Alertness Fatigue Task Effectiveness (SAFTE) model, a bio-mathematical model that predicts fatigue risk and cognitive performance, providing our employees with a predictive fatigue rating to be used before and during their shift.

The Readiband™ trial was conducted with two workgroups over a three-month period. During the trial, employees could view their sleep pattern, the hours they were awake and their level of fatigue, via a smartphone application. Being able to personally monitor their own fatigue has increased their awareness of the risk of fatigue, not only during their time at work but also during their commute to and from work and on their days off.

The results of the trial showed that when using the Readiband™, fatigue risk in both workgroups was reduced on both the day and night shift, enabling safer and more efficient production. The Readiband™ data also supported the identification and referral of some employees to a sleep physician to assist with improving their sleep.



ESTABLISHING A REGIONAL WELLNESS COMMITTEE IN THE AFRICA REGION

To support the implementation of our Care Strategy across all operations in our Africa region, a Regional Wellness Committee has been established.

The Regional Wellness Committee aims to increase our employees' awareness of the importance of their own health and wellbeing, promote company initiatives and share ideas on what they can do to improve their own health. The Committee consists of representatives from areas across the business and includes contracted service partners for occupational health and the Employee Assistance Program (EAP), which is available to all employees and their immediate families.

The EAP program offers online resources such as articles, quizzes and advisory services, which have been provided to cover the most prevalent risk factors. The program has offered financial guidance to employees, one-on-one counselling, an anti-stress day, free massages and hand treatments through its iRelax initiative.

Since the establishment of the Regional Wellness Committee, all operations in the Africa region have taken part in a wellness campaign aimed at establishing a risk profile for South32 employees. During the campaign, 4,267 employees were assessed for risk factors including high blood pressure, obesity and high glucose readings. The results are used to align the Regional Wellness program with the risks identified.



CASE STUDY

Financial education changes lives

As part of the Mission Possible wellness program at our Hillside aluminium smelter in South Africa, approximately 440 employees and contractors took part in an online financial education course.

This course provided information on financial literacy and ways to plan for financial security. Following completion of the course, 108 staff members opted to complete their studies at a business college in Richards Bay. The course has received widespread positive feedback from participants.



SUPPORTING HEALTHY COMMUNITIES

Our operations are located within or near local communities. We seek to understand and manage activities that affect community health and implement programs that aim to mitigate these health impacts. This includes managing dust, noise and waste to reduce our impact on communities. If any issues do arise, there is a process in place for community members to report a concern and we will work with them to help resolve the concerns.

We are committed to minimising the impact of communicable diseases such as HIV/AIDS, tuberculosis and malaria, on our local communities. We collaborate with relevant community-based organisations and Non-Government Organisations in the fight against these diseases.

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CASE STUDY

Reducing communicable diseases

Globally, HIV/AIDS, tuberculosis (TB) and malaria are the major causes of communicable disease-related mortality. This program is a direct contribution to targets under Sustainable Development Goal 3: Good Health and Wellbeing: By 2030, end the epidemics of AIDS, tuberculosis, malaria, and neglected tropical diseases and combat hepatitis, water-borne diseases, and other communicable diseases.

In Mozambique, Mozal Aluminium is working to minimise the risk of malaria among employees and contractors, as well as supporting their families based in the local community.

A comprehensive vector control program was introduced which includes spraying and fogging of work areas, improved drainage, application of larvicides to standing water, installation of gauze screens on windows and external doors and distribution of personal insect repellent across the site.

General health information on malaria and personal protection measures is part of the induction process when someone joins our workforce. This information is displayed around the workplace and discussed in safety meetings, toolbox talks and seasonal campaigns.

Accurate diagnosis and effective treatment are two key factors to ensure the proper care of malaria patients. At our Mozal aluminium smelter, qualified medical personnel are available to examine, test and treat employees and contractors who present with symptoms. The incidence of positive malaria cases is monitored and reported to management.

By focusing on vector or mosquito control, medical intervention and community liaison, there has been a 58% reduction in Mozal's malaria incidence from 2013 to 2016.

Diagram 1 Mozal Aluminium Malaria Incidence

Month	Employees	Contractors	Mozal Plant Total
JAN 13	2	5	7
MAR 13	3	18	21
MAY 13	2	5	7
JUL 13	2	5	7
SEP 13	2	5	7
NOV 13	2	5	7
JAN 14	2	17	19
MAR 14	2	5	7
MAY 14	2	5	7
JUL 14	2	5	7
SEP 14	2	5	7
NOV 14	2	5	7
JAN 15	2	5	7
MAR 15	2	14	16
MAY 15	2	5	7
JUL 15	2	5	7
SEP 15	2	5	7
NOV 15	2	5	7
JAN 16	2	5	7
MAR 16	2	5	7
MAY 16	2	5	7
JUL 16	2	5	7
SEP 16	2	5	7
NOV 16	2	5	7
JAN 17	2	5	7
MAR 17	2	5	7





Our purpose

Our purpose is to make a difference by developing natural resources, improving people's lives now and for generations to come. We are trusted by our owners and partners to realise the potential of their resources.



Our strategy

Our business strategy is to invest in high-quality metals and mining operations that allow our distinctive capabilities and regional model to stretch performance in a sustainable way. By maintaining financial discipline, we will deliver sector leading total shareholder returns.

We will continue to:

- Optimise the performance of our existing operations
- Unlock their potential by converting high value resource into reserve
- Identify new opportunities to compete for capital



Our values

Care

We care about people, the communities we're a part of and the world we depend on.

Trust

We deliver on our commitments and rely on each other to do the right thing.

Togetherness

We value difference and we openly listen and share, knowing that together we are better.

Excellence

We are courageous and challenge ourselves to be the best in what matters.

