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# Breathless for Blue Jeans

Health hazards in China's denim factories



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# Executive summary

**Blue jeans are big business, and in recent years fashion designers have created new demand for denim which comes with a pre-worn look. To meet this demand, the process of sandblasting was introduced as a cheap and easy way of 'distressing' jeans. Sandblasting involves firing abrasive sand onto denim under high pressure, whether in a machine booth or simply via an air gun attached to a hose. Often performed without proper ventilation, safety equipment or training, the practice exposes workers to serious risk of silicosis, the deadly lung disease caused by inhalation of silica dust.**

This report investigates six denim factories in the south China province of Guangdong, a region that is responsible for half of the world's entire production of blue jeans. Even though many well known brands have banned the use of sandblasting in the production of their denim, workers in these factories reveal that the practice continues behind closed doors. In addition, many factories have introduced other methods of distressing denim which bring their own health risks, and workers are rarely given the necessary training in how to use the new techniques safely. Many are forced to work up to 15 hours a day with little or no protective equipment simply in order to earn enough to live on, exposing them to potentially fatal illnesses. Medical checks offered to

the workers are woefully inadequate, increasing the danger when diseases remain undiagnosed.

It is almost a decade since doctors in Turkey first raised the alarm at the threat of silicosis in the garment industry. In response to the growing number of deaths and illness among young denim workers in that country, the Turkish government introduced a national ban on sandblasting in 2009. The following year, the Killer Jeans campaign succeeded in persuading over 40 major denim brands to announce their own bans on the use of sandblasting in the production of their jeans. Yet the practice of sandblasting continues, now augmented by other harmful finishing techniques such as hand sanding or chemical spraying.

This report provides recommendations for action by brands, governments and international bodies in order to end the use of sandblasting in denim production once and for all. Voluntary bans have been shown to be inadequate as a means of tackling the problem, as brands themselves admit that they have been unable to verify that sandblasting has been discontinued in reality. A mandatory global ban on sandblasting in the garment industry, coupled with full training on all other finishing techniques, is the only realistic answer to a practice that continues to threaten the occupational health and safety of workers around the world.

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# 1. Sandblasting: an introduction

03

**“Occupational health should aim to promote and maintain the highest degree of physical, mental and social well-being of workers in all occupations; to prevent amongst workers the departure from health caused by their working conditions; to protect workers in their employment from risks resulting from factors adverse to health; to place and maintain workers in an occupational environment adapted to their physiological and psychological capabilities; in summary, to adapt work to the workers and each worker to his or her job.”** Joint ILO/WHO definition of occupational health<sup>1</sup>

Occupational health and safety (OHS) is one of the cornerstones of industrial workplace legislation. It served as the foundation for the establishment of the International Labour

Organisation (ILO), which sought to establish OHS as not only a basic labour right but as a fundamental human right. OHS remains one of the ILO Constitution’s main objectives, and as early as 1950, the ILO and the World Health Organisation (WHO) had already developed the above definition of occupational health and safety as a building block for labour legislation.

OHS is recognised as a set of coherent measures designed to protect workers from sickness, disease and injury arising from their employment. But the steady improvement of workplace practices and declining rates of occupational disease and injuries in the global North has meant that the most dangerous and unregulated working conditions shifted toward cheaper labour markets of the current garment-producing countries. Every 15 seconds, according to the ILO, a worker



**Workers in the mechanical polishing department in Yida factory, Guangdong Province**



dies from a work-related accident or disease somewhere in the world.<sup>2</sup>

While the garment industry may not seem at first glance like a high risk occupation, it contains more than its fair share of deadly practices and toxic chemicals, especially in denim production. By the mid-1980s, manufacturers had begun using techniques to 'distress' denim in order to make jeans look used or pre-worn. By the 1990s, the trend for distressed jeans had become so popular throughout the West that it ushered in the widespread use of sandblasting. The sandblasting process is fast and cheap, and can increase product value tenfold. Sandblasted jeans are big business.

As described in more detail below, the sandblasting process entails a treatment that involves blasting abrasive sand under high pressure to create worn patches on the denim fabric. Sometimes sandblasting booths are used, but in many cases the work is done manually. In addition, other techniques used to distress denim include hand-sanding, stone washing and various chemical treatments, all of which involve their own risks.

It has been almost a decade since the first high-profile silicosis epidemic among denim production workers was highlighted by doctors in Turkey. Thus it is all the more shocking that garment workers are still being forced to risk their lives for the sake of a fashion detail today. Meanwhile, despite all the available data that point to the hazards involved, many factories continue to use sandblasting and have countless workers hand-sanding denim in extremely dusty environments, or spraying jeans with toxic chemicals with no regard for their safety.

In response to the global campaign to end sandblasting led by the Clean Clothes

Campaign (CCC), over 40 brands have promised to ban sandblasting. Yet the research undertaken for this report into China's denim industry, together with an earlier CCC report on the situation in Bangladesh,<sup>3</sup> shows that the practice continues. Moreover, the research also revealed many other potentially dangerous techniques involved in the production of denim – such as chemical spraying, bleaching, hand-sanding and polishing – that are increasingly being used as a substitute for sandblasting, all of which present their own particular risks and have not been adequately tested or investigated.

Garment workers in China can face appalling working conditions that often include extremely long hours, low pay, insecure employment situations and the lack of formal contracts. These hallmarks of the Chinese garment industry were summed up by one male garment worker in his 30s interviewed for this report: "Earning a hundred dollars is no easy matter. I have to risk my health to earn it. Even if you're not working, standing up for 12 hours straight is very tiring. Of course, it's even worse if you're polishing a few hundred pairs of jeans per day."

Combined with the fact that China outlaws independent trade unions and that the majority of employees are rural migrant workers, often female, who encounter consistent institutionalised discrimination, it is evident that the garments industry survives on the hard work of an underpaid and vulnerable workforce. As in many other low wage countries, gender discrimination is widespread, with women often occupying the lower paid, less skilled jobs. As one seamstress noted: "We don't receive overtime premiums, statutory holiday time or any regular days off. We are busy every day, month after month. We work harder than buffalo, but the management never treats us



like human beings. I may earn ¥3,000 a month, but I don't dare buy anything other than the barest necessities." (£1 = approximately 10 Chinese yuan, ¥) Many women workers are forced to quit their jobs when they become pregnant, and few are ever afforded the maternity rights to which they are officially entitled.

### 1.1. Risk of silicosis

There are two major types of sandblasting processes: manual sandblasting and mechanical sandblasting. Both can be deadly. Manual sandblasting is performed by individual workers manually operating an air gun attached to a hose and compressor from which the sand is blasted under high pressure to distress the denim. This remains the most commonly used process in most garment-producing countries in the global South, and is often used without installing proper ventilation equipment, exposing workers directly to silica particles that are released from air compressor guns. These tiny particles of blasted sand (silica dust), if inhaled, can cause severe respiratory problems for workers; in cases of intense or long-term exposure, inhalation can lead

to fatal diseases such as silicosis and lung cancer. Experienced sandblasters can sandblast between 500 and 600 pairs of jeans per day, which includes reloading the sandblaster with sand three to four times a day, the fully reloaded equipment weighing some 60-70 kg.

Mechanical sandblasting is performed inside blasting cabinets, and companies have therefore often insisted that this method is safe for operators. However, even the companies that use this technique are now beginning to admit that there is no truly safe sandblasting method, because even with mechanical sandblasting particles escape from the unit to expose factory workers during the process of cleaning the containers. Moreover, when mechanical sandblasting is used in various garment-producing countries, the units are seldom sealed properly due to heat issues and lack of proper ventilation, which renders this technique even more dangerous for workers.

Whilst sandblasting to achieve that pre-worn denim look is a relatively new phenomenon in the clothing industry, similar techniques have

been used in the mining and building industries for decades, and the link between the use of sandblasting and the risk of silicosis has long been acknowledged. In fact, health risks associated with manual sandblasting reportedly prompted the initial drafting of sandblasting regulations throughout much of Western Europe in the 1960s.<sup>4</sup> Sandblasting techniques that use natural sand are especially problematic, as workers inhale crystalline silica dust particles during the process, causing serious damage to the respiratory system. These particles are invisible to the naked eye; the body is unable to expel them and they gradually impair lung capacity and a worker's ability to oxygenate blood.

As an alternative to sandblasting, it is also possible to distress denim just by sanding, either by hand or by machine. Machine sanding is done by using a sanding machine across a wider area of the denim, while hand-sanding is done with a fine grain sand paper by hand. There has been no research, as yet, into the long-term effects of hand-sanding denim for 12 hours a day, every day, for months or years on end. Given the dust and cotton fibres that almost all of the workers interviewed complained about, dust levels in the workplaces we investigated are likely to be much higher than the required levels for clean air in a workplace. As such, workers continue to be put at risk of developing other potentially serious respiratory diseases.

## WHAT IS SILICOSIS?

Silicosis is an incurable lung disease caused by the inhalation of dust containing free crystalline silica. It is one of the oldest known occupational diseases, and still leads to thousands of deaths every year worldwide. Symptoms include shortness of breath during exertion and, as the disease develops, also while resting. This places an additional strain on the heart and eventually leads to death. The progress of silicosis can be slowed if symptoms are diagnosed at an early stage, but it cannot be reversed.

The risk of developing silicosis is mainly dependent on the intensity, nature and duration of exposure. Extremely high exposures are associated with much shorter latency periods and a more rapid progression of the disease. There are four main types of silicosis: chronic, accelerated, complicated and acute silicosis. Chronic silicosis is the most common form and is the result of long-term

exposure, usually appearing 10 to 30 years after initial exposure; this form was commonly diagnosed among coal miners, quarry workers and similar occupations.

Acute silicosis (silicoproteinosis) develops at anything from a few weeks to five years after initial exposure to high concentrations of silica dust, and can often lead to a rapid death. It is this form that affects garment workers exposed to intense silica levels during manual sandblasting. Silicosis has also been linked to the development of other diseases including tuberculosis, cancer and autoimmune diseases. Its symptoms may actually be very similar to tuberculosis, which hinders proper diagnosis, and pulmonary tuberculosis (silico-tuberculosis) is itself a frequent cause of death in people with silicosis. Respiratory failure and heart failure are other major causes of death.



# 2. China: health and safety

**The ILO estimates that some 2.3 million workers lose their lives every year around the world as a result of workplace accidents and diseases contracted on the job. Moreover, 340 million workers worldwide are involved in workplace accidents, and 160 million contract occupational diseases each year. These statistics comprise reported cases only, and so the true figures would no doubt be much higher. The actual figures for workers contracting occupational diseases are particularly difficult to ascertain, as so many are unable to obtain proper diagnoses and many more are uninformed about the details of a particular disease contracted in the workplace. Employers often use ignorance as their excuse to avoid blame while other employers will use any means necessary, legal or illegal, to avoid recriminations and lawsuits.**

Despite extensive global legislation on occupational health and safety and other workers' rights, employers remain negligent and many do not comply with even the most basic regulations. This is especially true in garment producing countries, among subcontractors and under informal contractual conditions. These are often the very situations where trade union rights are undermined, leaving workers exposed to the risks of OHS violations.

China has thus far only signed four ILO core conventions, and these do not include Conventions 87 and 98 on freedom of association and collective bargaining. China has recently signed Convention 155 on occupational health and safety, which forces the Chinese government into the spotlight in relation to ensuring safe working conditions. But China has an appalling national record of workplace accidents and illnesses: according to official Chinese government statistics,

there were 380,000 incidents in the workplace during 2009, in which 83,196 people lost their lives – a total of 228 worker deaths per day.<sup>5</sup>

China's OHS system is characterised by an overall lack of coordination between the various departments, regional bureaus and national ministries responsible for OHS issues. There is a dramatic lack of resources, monitoring is lax, corruption is endemic and abuses of power by local authorities remain high. Corruption occurs where local authorities and factory owners (including hospital officials) are complicit in a variety of illegal activities. The lack of effective legislation and punitive measures to confront the factories that violate OHS regulations, and the low levels of authority and manpower from factory inspection teams and the labour departments, mean that appallingly low levels of health and safety compliance can go unnoticed and unpunished.

In China, occupational health hazards generally remain invisible and underreported. Officially, employers are required by law to provide health examinations for workers exposed to hazardous working conditions, not only in the course of their duties but also prior to the commencement of their employment as well as upon their departure. Employers seldom abide by this legal requirement, and the workers themselves know very little about the occupational health hazards they may encounter on the job.<sup>6</sup>

In theory, diagnosis of a work-related illness by a recognised health official can serve as the initial step towards receiving proper and timely medical treatment. The initial diagnosis can then be verified by a local labour and social security authority to ensure that the occupational illness is indeed work-related. A subsequent diagnosis would establish

the severity of the disability resulting from the work-related illness. Furthermore, the victims are theoretically able to claim compensation for their illness from social security authorities.

All this is hypothetical because many Chinese garment workers are unaware that their illness may be work-related. Diagnosis remains very problematic. For instance, garment workers without a formal work contract may not be eligible for the official medical examination. Workers often believe they cannot afford to go through the time-consuming process, while others may simply not trust the system and prefer to settle their cases with their employers in private. These types of arrangements often lead to much lower compensation payment than the legal minimum.

Even when workers have been diagnosed as suffering from a workplace-related disease, they often face insurmountable hurdles in getting compensation, and migrant workers are often shuffled between various departments and regions as they pass through the elaborate bureaucracy in pursuit of compensation for work-related injuries or disease. Additionally, workers often face enormous obstacles to obtaining just compensation, as many factories simply refuse to pay the workers even after the courts have ordered them to do so. The official Chinese trade union, the All China Federation of Trade Unions (ACFTU), is usually absent during the proceedings, and traditionally backs the interests of local government in the name of preserving a 'harmonious' society: "Trade unions, and local governments, tend to protect and coordinate with the companies to ensure good relations and do nothing that will disrupt the flow of tax and rent revenues of the investors."<sup>7</sup>

## 2.1 No compensation

While China has passed many occupational health and safety regulations, their actual implementation and enforcement, like most other labour laws, remains poor. It takes months or even years for a worker to be properly diagnosed before they can enter into legal compensation proceedings. Some workers die before they even make it to the examination stage. If they do manage to get diagnosed, workers must prove that their injuries were caused on the job. They must then be assessed to establish the level of disability or illness, for which workers must prove their employment relationship with the factory, which usually means providing a written contract. This remains one of the greatest hurdles, given how few garment workers actually have official contracts.

To obtain full compensation, workers must either quit their jobs or be dismissed to even begin the compensation process, thus leaving them with no income during the protracted legal process. The final compensation rate is based on the average wage of the preceding year. However, workers have to provide proof of their average wages, including pay slips, which many workers never receive. Wage slips often quote a lower wage, usually the minimum wage, to reduce an employer's social insurance contributions. This affects the calculation of the compensation because when the worker has no proof of actual wages, the compensation is calculated with the average wages from social insurance records, reducing compensation to below what they have a right to. Thus, if a worker earns ¥3,000 a month working 15-hour days, seven days a week, their official wages may be just the minimum ¥1,000, reducing the compensation they are entitled to by two thirds.



Workers who demand compensation can also go to court, but cases may drag on for years. In the end, the factory owner may simply refuse to pay up, with the worker having no real legal recourse. This process is so difficult that seven out of 10 workers are unwilling to pursue a legal settlement.<sup>8</sup> Most workers prefer more informal negotiations with their employers, which generally results in a much lower monetary settlement, with many settling for 40% less than the legal standard for compensation for their disease. Migrant workers who contracted silicosis in south China's gemstone industry have endured years of lawsuits to gain compensation, and several have died prior to a court decision.<sup>9</sup>

Official Chinese figures for workplace injuries or work-related illnesses since 2001, when government records began detailing OHS-related diseases, remain unreliable. However, the most prevalent illness is certainly silicosis. In 2009, over 90% of new OHS cases were pneumoconiosis cases, which includes silicosis. The second most prevalent disease

was workplace poisoning, primarily from exposure to lead, benzene and arsenic. The generally low total figures are clear evidence of unreliable data: for instance, official figures recorded 22 cases of benzene poisoning in China in 2009, while an NGO report in the same year detailed 50 cases of workers suffering from the effects of leukaemia caused by benzene poisoning in Dongguan (a city in Guangdong province) alone.<sup>10</sup>

In 2010, over 20,000 industrial and mining enterprises in Dongguan experienced occupational hazard incidents. These companies employed over 5.5 million people, but only 6,000 of these enterprises actually reported occupational hazard incidents to the government. The State Administration of Work Safety monitored only 280 of these 6,000 companies. Moreover, only 58,000 of the total 5.5 million workers reportedly received regular occupational health compensation examinations – less than 2% of the total number of workers who are eligible to receive such check-ups.<sup>11</sup>

# 3. China: factory findings

This report presents the findings of research in six factories in Guangdong province, home to the largest concentration of denim manufacturers in China, and responsible for roughly half of the world's entire production of the fabric. The factories varied in size, levels of modernity and working standards. Of the six factories, two are considered major garment producers, each employing thousands of workers: Conshing Clothing Group Co Ltd (hereafter Conshing) and Zhongshan Yida Apparel Ltd (hereafter Yida); Yida claims it supplies approximately 4% of the total US jeans market. The Conshing factory, meanwhile, produces some 50,000 garments per day for both domestic and export markets.

Dongguan Tianxiang (hereafter Tianxiang, but also known as Tim Cheung) is a smaller factory that employs approximately 400 workers. The other three factories are much smaller and are classified as second-tier

suppliers. Weiqiang Washing Plant (hereafter Weiqiang) and Dongguan Golden City Washing Sandblast & Brush Factory (hereafter Golden City) are both subcontractors that have previously produced garments for Yida, according to Yida's parent company Crystal Group. Golden City also supplies garments for the last of the six factories researched for this report: Dongguan Gloss Mind Apparel Co (hereafter Gloss Mind).

Research in the six factories revealed that only one factory, Gloss Mind, had fully eliminated its sandblasting production line, and that the sandblasting facilities in the other factories were reportedly still in operation. While the three factories of Yida, Golden City and Conshing had officially announced that they were to abolish the practice of sandblasting, our investigations (including direct workers' testimony) revealed that the practice may not have been discontinued at all. One factory reportedly continued its sandblasting on the sly, surreptitiously



Sewing department in Conshing factory, Guangdong Province

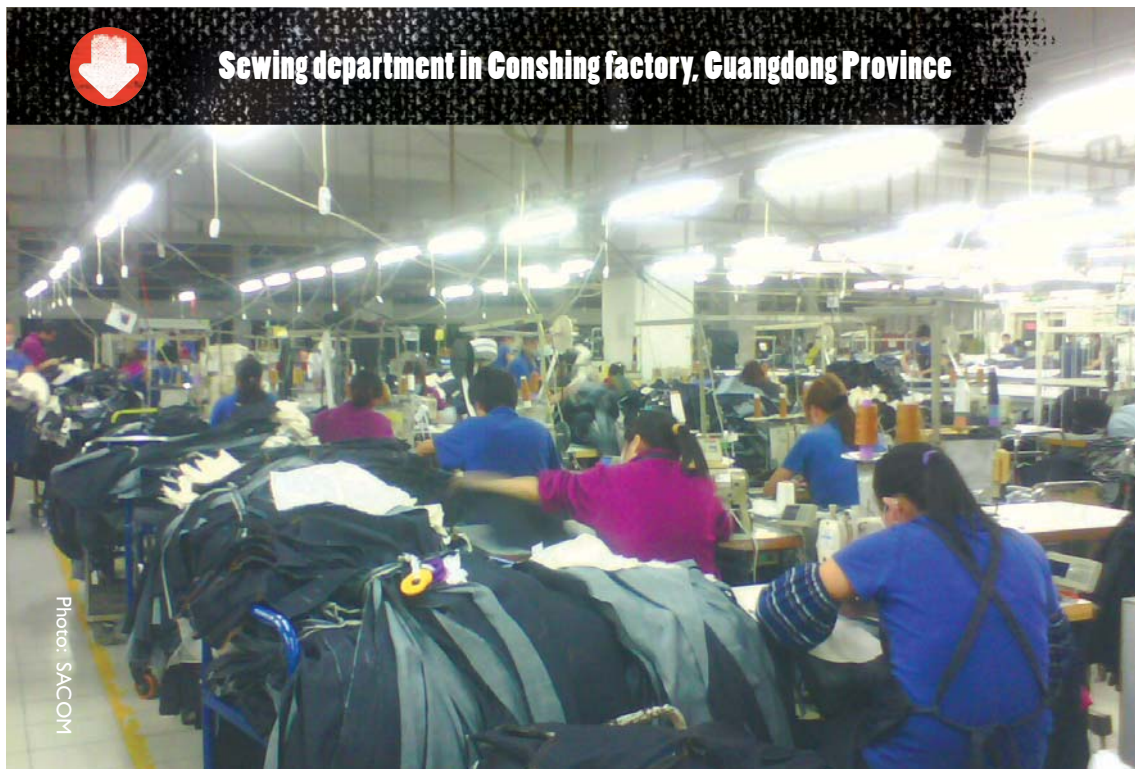


Photo: SACOM

dismantling the sandblasting machinery and hiding it in advance of inspections – a practice also uncovered by Levi Strauss during factory assessments of one of its suppliers in 2011. Factories had also concealed their sandblasting units behind locked doors and had increased security for these units, limiting access solely to the sandblasters.

Instead of being eliminated, therefore, sandblasting seems to be morphing into a more covert operation, potentially creating an even deadlier workplace environment. We also found that many of the other finishing processes used to distress denim products continued to expose workers to extreme risks because the processes were seldom, if ever, performed in a safe manner. The research revealed that workers who were engaged in hand-sanding, polishing or chemical treatment processes had neither been trained in the proper use of the equipment and materials, nor had been provided with adequate protection such as proper mouth masks and goggles. The research also uncovered widespread violations in such areas as working hours, excessive overtime, freedom of association and employee contracts, thus painting a bleak picture of a garment industry that relies on migrant workers who have little choice but to risk their own health and welfare to earn a meagre living, manufacturing jeans for mostly large, high-profile brands.

### 3.1 Factories and buyers

Yida, located in Zhongshan in China's Pearl River Delta and part of the Hong Kong-based Crystal Group, was established in 2005 and produces one million pairs of jeans per month for high-profile Western brands as well as for the Asian market. The company is the third largest 'bottoms' exporter in China, and has focused on promoting a more eco-

friendly profile, claiming to have invested in more sustainable denim processes.<sup>12</sup> Yida boasts the following well known Western brands among its clients: Levi Strauss, H&M, Gap, Hollister, Wrangler, Old Navy, Faded Glory and Duo.

Conshing's website states that its guiding principle is 'Quality First, Customer Foremost', and that the factory is actively developing business links with brands such as Lee, Wrangler, Jack & Jones, Only, Phard, CLRIDE.n and Vero Moda, among others, as it strives to defend its position as "one of the largest cowboy casual clothing manufacturers in China".<sup>13</sup> Tianxiang's major clients include Hollister and American Eagle. Weiqiang has previously been a supplier to Lee and (through Yida) to Levi's, while Golden City and Gloss Mind are both listed as suppliers of Levi Strauss along with Yida.<sup>14</sup>

All six factories featured in this report are involved in various levels of non-compliance with existing health and safety regulations. For instance, none of the factories where sandblasting was still reported to be taking place provided sandblasters with adequate safety equipment, and workplace standards in all six factories were far from satisfactory. High levels of fabric fibres and sand dust in the air in the polishing and sanding units drastically increase the risk not only of silicosis but also potentially of byssinosis (also known as 'cotton workers' lung'), pulmonary fibrosis, and other respiratory and pulmonary diseases. Yida, a relatively stable and prosperous factory, had better working conditions than some of the other investigated factories, but levels of dust and inadequate ventilation of its polishing units were common complaints among its employees. The smaller factories were far from compliant.

Our research found that a number of factories have installed extensive security measures to reduce interactions between sandblasters and other employees. For example, Conshing installed numerous surveillance cameras on the shop floor to reduce employee traffic between departments, while Golden City has installed extensive CCTV. (Detailed factory profiles and research methodology are found in the appendix at the back of this report.)

### 3.2 Sandblasting

Our research found that the use of sandblasting saw an overall decline between 2009 and 2012, partly reflecting the success of the international campaign to ban sandblasting. However, many factories were still employing hazardous sandblasting practices both covertly and in plain sight. Although Yida had reportedly closed down its sandblasting unit two years earlier, workers at Yida interviewed in November 2012 claimed that in fact Yida was still employing sandblasting and using sandblasting machines. Two shifts were reportedly in operation, with five to six sandblasters per shift. This alleged continuing use of sandblasting runs contrary to Yida's claims that they have eliminated sandblasting, and is contrary to the policy of one of its most high-profile buyers, Levi's.

The majority of workers employed by Conshing (approximately 2,000) work in the cloth cutting, embroidery and sewing departments, with another 300 or so employed in the polishing department on the second and third floors, which includes both manual and mechanical sandblasting. Most of the workers in these departments are male. The sandblasting unit consists of a sealed room within the polishing department. Workers from other units are restricted from

entering the sandblasting unit, and most of them know very little about its conditions. On rare occasions, when the sandblasting unit's door is left open, some of the others may have a glimpse inside. Workers describe a hot, noisy room with poor visibility due to all the dust in the air. Sandblasters are provided with helmets to wear which appear to include respirators, but they do not always wear their helmets due to the extreme heat.

In early 2012, Conshing was still operating some 40 to 60 sandblasting machines, employing about 80 sandblasters. However, a general decline in orders and a reported reduction in demand for sandblasted products meant that by October 2012 there were eight reported sandblasting machines being operated in one or two shifts per day.<sup>15</sup>

One Conshing worker described how they sometimes couldn't even see the exit door through the dense levels of dust floating in the air. Workers say the physical labour is extremely hard and difficult to adapt to. During the recruitment phase, polishing department applicants are asked whether they are willing to 'swallow the bitterness', i.e., endure the rough working conditions. Many interviewees pointed out that younger workers increasingly refuse jobs in the sandblasting unit, which has forced Conshing to offer higher salaries to fill the sandblaster positions. They reportedly earn a higher salary, some ¥300 per day compared to ¥100-200 for others. Even though Conshing's sandblasting machines have been moved into a separate room, some other employees help process the finished products, cutting threads and keeping an eye on the sandblasting machines. Sandblasters often complained about the levels of dust they were exposed to, and the high pressure that the sandblasting hose is under.



Some of the Conshing workers interviewed for this report said they had heard that sandblasting might cause silicosis. However, the factory offers its employees only a rudimentary check-up, and they are seldom given detailed results. Workers made it clear to the researchers that they really needed their jobs to survive. Furthermore, although they were aware of the health risks associated with their jobs, they were willing to take the risk for the higher salaries that Conshing offered sandblasters. Factory owners and brands that continue to use sandblasting and are aware of the job's health risks have apparently decided to compensate workers by paying higher wages, which shows a blatant, shocking disregard for the workers' lives.

Golden City workers declared that there were two manual sandblasting machines in use at the time of the research. They reported that whenever there was an audit or factory inspection, workers were ordered

to dismantle the two machines into small pieces, which were then hidden in a small room. Workers stated that this was because Gloss Mind, the chief buyer, did not want its major client Levi's to know that Golden City was still engaged in sandblasting, as Levi's had banned sandblasting from its supply chain. However, other Gloss Mind customers continued to order sandblasted denim garments and needed to keep some of the machines on hand. After auditors or clients left, the sandblasting machinery was simply reassembled and reinstalled in the sandblasting unit.

Golden City's sandblasters complained about sand dust covering their faces and hands. One sandblaster believed that there was something wrong with the inside of his throat and described how he sometimes spits a blue-black dusty phlegm. Golden City, according to the workers the researchers spoke with, did not provide adequate safety equipment for its workers; in fact, it was

pretty much limited to cotton mouth masks, while some workers wore no protection at all. Some of the supervisors made it clear that the efficacy of the cotton masks was probably fairly limited, given the strength of the sand coming from the sandblasting machines and the minuteness of the particles.

Gloss Mind officially has no remaining washing, fading or other technical treatment units because it has essentially outsourced these processes to Golden City. Hand-sanding and other processes continue, however.

Similarly, Weiqiang has about eight sandblasting machines and 40 manual sandblasting machines, but these machines are reportedly no longer in use (or barely so). Workers reported that in March 2011, Lee representatives demanded that all of their products be hand-sanded and hand-brushed rather than sandblasted. But other brands continued to place orders for sandblasted denim products until June 2011, when the factory reportedly decided to subcontract their sandblasting orders.

According to hand-sanding and polishing workers interviewed in Tianxiang in November 2012, sandblasting continues to take place with a reported five to six workers in the sandblasting department. The only protection they have from the dust is a simple cotton mask. Although there are ventilation fans in the unit, it remains extremely dusty.

### 3.3 Other techniques

“Danger lurks at every stage of the denim treatment process,” a supervisor in one of the factories investigated for this report observed. “It’s impossible to avoid all of the hazards, although you can sometimes opt for a stage in the process that is less hazardous.” This is due to the fact that there are numerous methods employed to distress denim, and all of them have their own unique

hazards. Techniques are applied to create different effects based on a variety of variables including circumstances, type of garment and area of garment. The hand-sanding of jeans replicates a worn look at the knees or thigh creases (‘whiskers’), while polishing creates specific worn effects through use of drills or polishing wheels. Other effects include laser effects, water-based treatments, dye application, and the spraying of chemicals such as potassium permanganate.

Each of these techniques can expose the workers involved to a dangerous mix of chemicals and fabric dust all day long. Sanding and polishing workers at Golden City, Gloss Mind and Conshing all reported that the air in their units is regularly full of black dust or sand particulates, combined with a chemical odour that overwhelms the workplace. The only protective gear that Conshing supplies are cotton mouth masks and gloves.

Yida’s hand-sanding department may employ over 200 workers during the high season, but during the low season the total may fall as low as 70 to 80 workers. In Yida’s overwhelmingly male hand-sanding unit, workers use sandpaper to polish the surfaces of the denim garments and use mechanical stone wheels to polish the pockets, waist and fringes of the jeans to distress them. Workers in the fringe-polishing department often complain that they are required to bend over the denim all day long, leading to fatigue and numerous back problems. Yida has never applied any ergonomic design measures in its factory, so that workers end up sitting on stools without proper back support and can be observed constantly bending over so that, according to interviews, most workers eventually contract chronic back and arm pain. As one male worker complained: “I’ve worked at Yida for four years. There is not a





1. A hand sanding worker using sand paper for polishing, Conshing factory, Guangdong Province

2. Polishing department at Conshing factory, Guangdong Province

3. Stone wheel polishing department at Yida factory, Guangdong Province

Photos: SACOM

single day that goes by that I don't feel the pain in my arms and back." Another Yida worker observed how his palms had become uneven as a result of extended periods of hard labour. Tianxiang workers also complained about chronic back pain, irritation and fatigue as a result of their having to stand bent over throughout their shifts.

Furthermore, stone wheel polishers at Yida often injure themselves by inadvertently grazing their hands, which are unprotected because safety gloves are reportedly not provided by the company. Workers also use a small mechanical device to polish the jeans, which are stretched out over inflated balloon mannequins. Despite the installation of a ventilation system, workers often complained about the high levels of dust in the production unit, which many claim is the

dustiest in the factory because of all the minuscule fabric fibres floating in the air. When the shop floor is swept (twice daily at Yida, for example), the act of sweeping sends the dust floating around the room again, with electric fans further blowing the dust from corner to corner on the work floor.

Workers in the hand-sanding departments at all of the investigated factories regularly complained of being covered in dark blue dust from the indigo denim fabric, which gets under their nails and is difficult to clean off their skins. Yida's employees observed that when they finally get to wash their faces at the end of their shifts, the water is a dark indigo colour and the dust is difficult to remove from their ears. Moreover, the heat combined with the pace of the work is so intense that workers complained about

it even during the winter season. Even the flimsy cotton surgical masks provided for hand-sanding work are often deemed too uncomfortable to wear because of the extreme heat; yet failure to wear the protection is also due to the fact that workers have not been properly trained in OHS issues, including the potential harm caused by the inhalation of dust and sand particulates.

Tianxiang's polishing department employs about 100 workers divided evenly over two 12-hour shifts, with a total of 30 more working in the fringe-polishing department, where workers use sandpaper and wire brushes to give the jeans a faded, ragged look – a process that also generates a lot of dust. Polishing department workers also complain of the heat and dim lighting on the work floor; they are constantly inhaling dust despite the surgical masks they are provided with. Like the Yida employees, they complain that the electric fans only make the situation worse because they blow dust around so that it constantly fills the air. Workers complained that when they shower the water turns black from the dust and cotton fibres. As one young male employee observed: "In our department, it's full of jeans and black dust. The temperature on the shop floor is high. It is difficult to breathe. I feel like I'm working in a coal mine."

### 3.4 Potassium permanganate

Potassium permanganate is today used largely for lightening denim. The process involves the chemical being sprayed onto denim garments and then washed off, leaving the treated area a lighter colour than the surrounding fabric. Workers spray the chemical onto the denim using a hose or sometimes a brush. After the chemical dries, it is neutralised with a second chemical and then washed off. The process exposes workers to the harmful inhalation of

the chemical's strong fumes. The advised method usually involves the spraying of denim garments in a sealed and ventilated booth, and if such a booth is unavailable then using respiratory masks, with the potassium permanganate applied from a 'safe' distance.

The three largest factories involved in this study each had their own potassium permanganate spraying departments. The overwhelming opinion is that the odour is irritating and strong, although some employees noted that they eventually got used to it after being exposed to it every day. Workers in all three factories pointed out that they had never received the necessary health hazard information or the proper training in how to handle potassium permanganate safely in the workplace. Some interviewees expressed their anxieties about the potential health risks, but most of them felt they had no choice but to accept those risks. Some Golden City employees were aware (others were not) that the chemicals were harmful, but were attracted by the higher salaries offered to chemical processing unit employees. Yida alone provided workers with organic vapour masks, ear plugs, aprons and rubber boots, and other workers were prohibited from entering the department. However, high temperatures in the department make wearing the masks so uncomfortable that approximately one third of Yida's employees do not do so. Many night shift workers take advantage of the more relaxed supervision to wear the more comfortable but less safe surgical masks.

Many Conshing employees admitted that they had no idea what kind of hazardous chemicals they were being exposed to, which upset them. They understood that potassium permanganate was potentially harmful but were unaware of exactly how, and many of them were willing to take the risk because

most would only be temporarily exposed to their harmful effects for a period of only a few years. Workers also said that supervisors often dismissed their health concerns, declaring that the chemicals were not harmful in any way. Conshing workers also complained about the strong smell of the bleach used in the potassium permanganate finishing process. They further stated that they applied special finishing powders to the jeans, which resulted in allergies and rashes.

Few of those employed in potassium permanganate units routinely wore safety masks or gloves. Ventilation was poor and the chemical odours were detected throughout the work area. One Tianxiang male employee noted: "We use potassium permanganate

every day. The air quality is very poor and I worry that I may end up suffering from various occupational diseases. Sometimes I wear more than one mouth mask. This may help filter out most of the dust, but these masks don't filter out the chemicals."

Over 80% of Weiqiang's total workforce of some 200 employees are involved in the washing processes, while another 30 workers are involved in the hand-brushing and sanding processes. Only 10% of the workforce is female, which is unusual for the garment industry. The researchers spoke to a number of workers, many of whom complained about how poorly laid out the workshops were and about the poor ventilation.



### Workers spraying potassium permanganate in an undisclosed factory in China



Table: average monthly salary per job (in ¥) after overtime and other piece rate wages, and before deductions

Factory	cut/sew	sandblast	hand/brush	wash	polish	iron	packing	salary
Conshing	2000-3000	4000-7000	3000-5000	3000-5000			2000-4000	piece rate
Gloss Mind	2000-3000							piece rate
Weiqiang		lo: 2000-3000 hi: 5000-6000	lo: 2000-3000 hi: 5000-6000					piece rate
Golden City		3000-4000	3000-4000	3000-4000	4000	2000-3000	2000-3000	piece rate

Employees who worked in Yida's washing department, where most of the liquid-based finishing techniques take place, often complained about the strong and irritating chemical odours. Bleaching agents, some of which are highly corrosive and irritating, are used extensively in these washing departments. But workers here, as almost everywhere else, simply did not receive adequate information about the chemicals, their safe use and the potential health risks. Many of them only knew the chemicals by their nicknames such as 'magic water', 'white glue' and 'soft oil'. Of the 80 workers employed in Tianxiang's spraying unit, none had sufficient knowledge about the chemicals they were using, calling potassium permanganate simply a 'white paste' they applied to jeans, wearing factory-issue basic masks and gloves.

Most of the factories surveyed were guilty of supplying limited and inadequate protective gear. Furthermore, none of the factories provided adequate training in the proper use of protective equipment. Yida's potassium permanganate unit workers were also reportedly required to wear goggles; yet during the research, no workers were seen wearing any sort of goggles. While Conshing

does provide surgical or cotton masks, it is limited to those in the polishing department. Furthermore, gloves were not provided at all. Workers in the hand-sanding department complained that their hands are often injured by the sandpaper and are stained indigo from the jeans. But most of the employees thought the protective gear that Conshing did supply wasn't very useful. To illustrate their point, workers noted that they regularly found cotton dust in their saliva after their polishing and sanding shifts. Meanwhile, Conshing workers in the chemical treatment unit complained of skin allergies and facial acne as a direct result of their exposure to the various chemicals, including potassium permanganate.

### 3.5 Health examinations

Although some of Conshing's workers in the polishing and potassium permanganate departments noticed that their health was deteriorating, with many interviewees citing respiratory problems, Conshing does not have a regular medical examination schedule in place for its employees, although some said they do have their blood tested occasionally. The most vulnerable of Tianxiang's employees, those regularly exposed to dust and chemicals, reportedly never receive health

check-ups, while others stated they had been examined once in two years of employment.

Yida is considered one of the better factories in terms of health examinations, providing an annual check-up for the majority of its washing, mechanical polishing, and potassium permanganate department employees. The researchers were told by workers that these examinations were quite comprehensive. However, some hand-sanding unit workers stated that they did not have access to health examinations: one employee who had worked at Yida for four years complained that Yida had never provided health examinations for him, while another claimed he had not received a check-up during his three years of work there. However, although many of Yida's employees may receive health examinations, they never get to see the examination results and are only informed about whether they have or do not have health problems. Even then, interviewees revealed that, although some workers were discovered to have respiratory problems, their ailments went undiagnosed (or at least unreported). According to interviewees, Yida's employees usually resign upon discovering a serious illness.

China's Law on the Prevention and Treatment of Occupational Diseases clearly states that employers must provide health examinations for employees exposed to work hazards prior to their commencement of employment, during their term of employment and upon their departure, and that workers have the right to be informed about the results.

### 3.6 Wages

Due to China's size and the significant differences in living standards and costs, there are many different provincial, regional and local minimum wage regulations on the

books. Shenzhen municipality and Guangdong province offer two of the highest minimum wages in China (up to ¥1,500 a month in Shenzhen, for example, and ¥1,300 in Guangdong province).<sup>16</sup> However, even within Guangdong province itself the rates vary significantly. An all too common practice in the garment industry and related manufacturing sectors is making the minimum wage the maximum wage. Workers then have to work vast amounts of overtime – for which they do not receive higher wages, but which they accept just to make ends meet.

Although many companies claim that labour costs in China have been on the rise in recent years, most workers continue to earn well below what is considered a living wage. According to the Asia Floor Wage Alliance, the estimated floor wage in China in 2012 was established at ¥2,332.80, without overtime.<sup>17</sup> However, no Chinese garment industry workers received this basic floor wage.

These already low wages are whittled away even more by the tendency of employers to withhold wages or delay payment. Despite the fact that there is extensive legislation on the books to protect workers through enforcement of minimum wages and timely payment of wages, garment workers continue

## HOW A GARMENT WORKER'S SALARY IS CALCULATED

Productivity (number of units) × unit price  
+ attendance bonus + allowance – deduction  
for food and dormitory – deduction of social  
insurance (if any) = monthly salary



**Worker wearing two masks to prevent inhaling cotton dust,  
Yida factory, Guangdong Province**

20

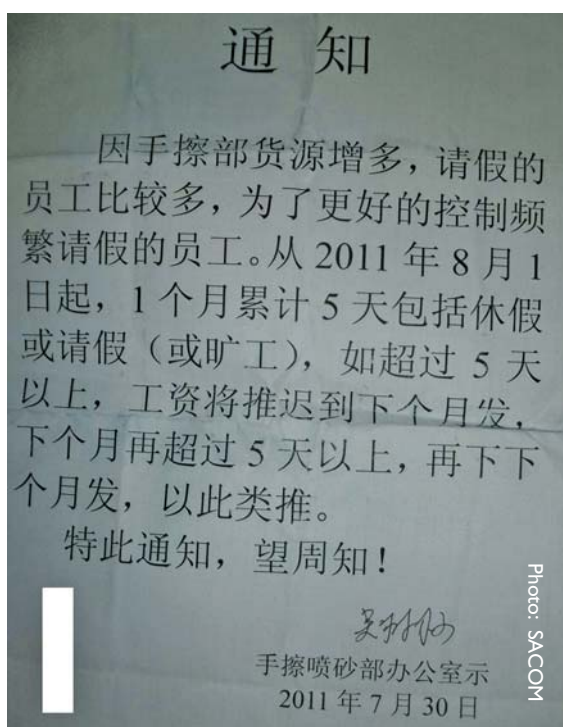


Photo: SACOM

to be the victims of violations of almost every aspect of these laws. These same practices were found in the six factories investigated for this report. China's Labour Law states that it is illegal not to pay wages on a monthly basis, and that the payment of wages cannot be delayed for any reason (Article 50). Yet Yida's employees receive their salaries on the 20th of the following month – 20 days late, in other words. Both Conshing and Tianxiang factories withhold wages for a full month, which is in clear violation of China's current Labour Law. In addition, wage disputes involving worker attendance

may delay payment for an entire extra month. The problem of deferred wage payment is exacerbated by complicated and vague accounting practices regarding official wages earned and unclear piece rates, which means that the calculations often work out to the disadvantage of the workers. Wages are difficult for workers to calculate with any accuracy because many are paid a combination of piece rate and regular wages, plus overtime rates which are often subject to a confusing schedule of deductions and fines.

Finally, as mentioned earlier, if a worker is eligible for compensation after an accident or a diagnosed disease or is eligible for social security insurance benefits, these are calculated based only on an employee's standard wage rate as stated in his or her contract, and not on actual earned wages, which would include overtime. While the law states that compensation should be provided according to average wages from the past 12 months, the worker needs to prove this, which requires pay slips to challenge the minimum wage given on the factory's salary statements. Article 17 of Guangdong province's labour law stipulates that employees must receive a pay slip that provides salary details. Yet in at least one factory – Conshing – workers reported they never receive pay slips. Instead they must check their expected monthly wage two days before receiving the definitive payment. A failure to provide a pay slip is a violation of the law.



*Notice stating wages will be delayed for a month if a worker takes five days' leave (whether it is annual leave or paid leave)*

### 3.7 Piece rates

The minimum wage in Zhongshan, where the Yida factory is located, is ¥1,100 a month, which serves as the base salary for Yida workers. This is not a living wage for a family. Most employees must supplement this base salary by doing piece rate work and working long hours of overtime. Some Gloss Mind employees pointed out that they were not always paid even the minimum wage, and often received inaccurate overtime payments. As noted above, Gloss Mind subcontracts some of the more labour-intensive and 'costly' processes out to other factories such as Golden City to reduce costs.

Conshing offers the same basic ¥1,100 minimum wage as Yida. All of its production line employees, except the packing department and the security guards, are paid a piece rate, so that an employee's total monthly salary depends on their productivity and on the piece rate. The piece rate is not, however, something that workers have agreed to, and even the most experienced workers can only estimate the actual piece rate. Conshing workers reported that the piece rate in the polishing department ranged from ¥0.25 to ¥1.00. Some 60% of the garments produced have a piece rate of ¥0.25, with most workers polishing 400-500 pairs of jeans per day. There is no provision for higher overtime piece rates.

One polishing unit employee who has worked at Conshing for two years explained it this way: "My monthly salary is about ¥3,000. It's hard to predict your wages; it all depends on how much work we have. Sometimes I can earn about ¥300 a day. In an extreme case, my daily income may be as low as ¥30." Long-term employees pointed out that the piece rate had actually been decreasing lately, and that their pay was shrinking. Most workers in the polishing department earn ¥2,000-3,000 per month, while the more experienced and

efficient among them may earn ¥4,000 working around 12-15 hours a day, most days a month.

The monthly salary for hand-brushing and sandblasting workers at Weiqiang varied from ¥3,000 to ¥4,000 depending on piece rates and the season, with employees vying for the higher piece rate garments. For instance, workers working on Lee products had received piece rates of ¥0.70-0.90, while those producing Levi's products for Yida had received just ¥0.55-0.70 for the same work. Weiqiang's flexible schedules mean that most employees work a basic eight-hour day with little or no overtime, while some of its employees are on call, waiting for large orders to come in. During the low season, some employees may end up working only 15 days per month; during high season they may work the entire month including weekends. One female Conshing employee described the competition between workers: "It is low season now. We don't have much work. Sometimes it's easy to get into conflicts with colleagues because we have to compete with each other for the little work there is. I don't want to argue with my colleagues, but I badly need to earn more money to support my family."

Tianxiang's production workers are paid piece rates with contracts stipulating a basic minimum monthly salary of ¥1,100 in cash. However, the contract also sets a limit of 22 working days per month while in reality, during high season, employees work non-stop with no days off unless they fall sick or have urgent personal issues to attend to. Some employees receive a fixed wage. For example, quality control personnel receive a fixed salary of ¥2,500 per month with no option to earn extra piece rate wages. The working day is 12 hours, excluding meal breaks. Most of the production crew are, however, paid piece

rates with monthly salaries of ¥3,000-4,000, depending on productivity and total working hours.

Yida seems to be the only factory where its workers have a clearer idea of piece rates in advance. The other factories prefer to keep it vague, making it almost impossible for workers to accurately calculate their wages. Yida's new hirelings are usually paid on a time rate rather than piece rate because they are less efficient. Working a 60-hour week, they can earn about ¥2,100 per month. Most of the sewing, polishing and washing department employees earn over ¥3,000 per month. The most efficient and energetic workers may earn ¥5,000, but this implies a lot of overtime as well. A piece rate system motivates workers to strive for increased productivity and higher salaries, but Yida's supervisors sometimes find it necessary to put extra pressure on the slower workers, which puts a lot of stress on the newer employees.

Meanwhile, many of Conshing and Golden City's employees were convinced that they were not being paid fairly, because these factories pay little or nothing extra for overtime and do not offer any additional benefits. Conshing's employees claimed that they only receive a ¥2 subsidy if they work more than 4 hours' overtime on top of their 8-hour shift. A piece rate system puts pressure on the workers so that many of them cut their lunch and dinner breaks to work more. Conshing's employees seemed ill-informed about their actual piece rates. There is also a significant difference in monthly salaries between the skilled and non-skilled, with recent hirelings earning an average ¥2,000 per month and senior employees earning ¥3,000-5,000.

Golden City's employees work in one of two shifts and are paid on a piece rate basis; they



end up earning a living wage only as a result of working almost double the number of hours allowed under Chinese labour law. Gloss Mind workers pointed out that although they produce for many big brands, their average piece rate is much lower than other Guangdong factories. They claimed that their salaries had not increased in over five years, and that workers earned only ¥0.50 per hour of overtime.

According to interviews with workers at Golden City, where Yida's orders (including those for Levi's) are now being processed by hand rather than sandblasted, strict quality control requirements have been passed onto the workers. This means that if a worker makes an error and a garment needs to be redone, penalties can reach up to ¥700 per

infraction. Workers note that Gloss Mind orders some 4,000 garments from Golden City per month. Although garments cost around ¥38, the penalty for losing or ruining a pair of Levi's jeans is about ¥500.

### 3.8 Hours and rules

The low basic wages and lack of social security benefits mean that most workers are forced to work long days to provide for their families. Overtime is not an option; it is both an economic necessity and often required by the factory, with refusal resulting in fines or dismissal. Chinese law states that a standard work week consists of 40 hours, totalling 174 hours per month, and requires that workers have one day off per week. Legally, overtime should not exceed 36 hours per month. Our research shows that few workers had a



## An exhausted worker resting after lunch, Yida factory, Guangdong Province



regular day off per week, with many of them not receiving a single day off in a month during peak periods. The research also shows that workers are generally required to work two to three times the legal overtime limit, especially during peak seasons, which provides the necessary income to provide for their families throughout the rest of the year.

Chinese regulations stipulate that overtime should be paid at a higher rate, with weekday overtime rates at least 1.5 times the average hourly rate and weekend overtime rates at double the normal rate. Any overtime accrued during the 11 official holidays should be paid triple time. These regulations are almost always ignored. Given the extent of overtime worked, this constitutes a significant non-payment of wages. Most factories seem to operate in 10 or 12 hour shifts with a meal break in the middle. After the shift workers have a second meal break, and then the overtime shift of 2-4 hours starts. The research reveals that most employees worked between 12 and 15 hours per day on average.

Yida's peak order period runs from November to August, and overtime can reach 100 hours, which is nearly three times the legal limit.<sup>18</sup> Shifts run from 0800 to somewhere between 2000 and 2300, with a total of two hours of meal breaks. Conshing also requires its employees to work excessive overtime: although the factory's work contract states that employees work 26 days per month, they actually have no more than two days off per month. During peak periods, leave can no longer be guaranteed and workers need to ask supervisors for permission to take a day off. Workers said that it is difficult to take a leave of absence, and if a worker fails to show up for work it is considered a work stoppage, which may lead to dismissal.

Yida does not fine its workers except for lateness. If workers are late, they will have a certain proportion of the hourly wage deducted from their pay slip, and receive a verbal warning. New Conshing hirelings pay an initial fee of ¥80 for two uniforms and ¥30 for a work card. Workers with over a year's service are eligible for uniform discounts. If a worker is absent without permission, it is considered a work stoppage and ¥50-100 is deducted from their salary. Polishing department workers are fined for damaging garments, while other wage deductions include:

- ¥10-40 for not wearing uniforms properly
- ¥10-40 for forgetting their work cards
- ¥20 for creating a mess on the shop floor
- ¥50 for bringing friends or unauthorised people to the dormitory without management permission

A Tianxiang employee who reportedly jumped the lunch queue was fined ¥50 and his name and department were publicly announced in the canteen. Factories may fire a worker with immediate effect if they deem the offence serious enough; for instance, disobeying superiors may lead to immediate dismissal without pay. At Yida, workers may be dismissed immediately for idling or sleeping on the job. Most factory rule books ban workers from organising except through official channels. Yida, for example, may immediately dismiss a worker for behaviour such as organising workers to assemble illegally, because it disrupts production.

### 3.9 Freedom of association

China has thus far refused to ratify ILO Conventions 87 (on Freedom of Association) and 98 (on Organising and Collective



Photo: Julio Etchart

Bargaining). China removed the right to strike from its Constitution in 1982, and Chinese legislation prohibits freedom of association, with only one workers' organisation being legally recognised by the state: the official All China Federation of Trade Unions (ACFTU). It is not uncommon for independent trade union and labour activists, and workers who engage in strikes for better working conditions, to be beaten or imprisoned for their activities. Despite these blatant repressions, companies continue to insist that they are complying with current codes of conduct which guarantee freedom of association through the ACFTU's activities.

Our research reveals that labour rights are regularly denied or repressed. Activists lack access to the essential communications and redress mechanisms to voice their grievances about current working conditions. The absence of any authentic trade unions in China remains a key stumbling block to the fulfilment of Chinese labour rights. Conshing, for instance, has an officially registered trade union; but not a single interviewee was aware of its existence.

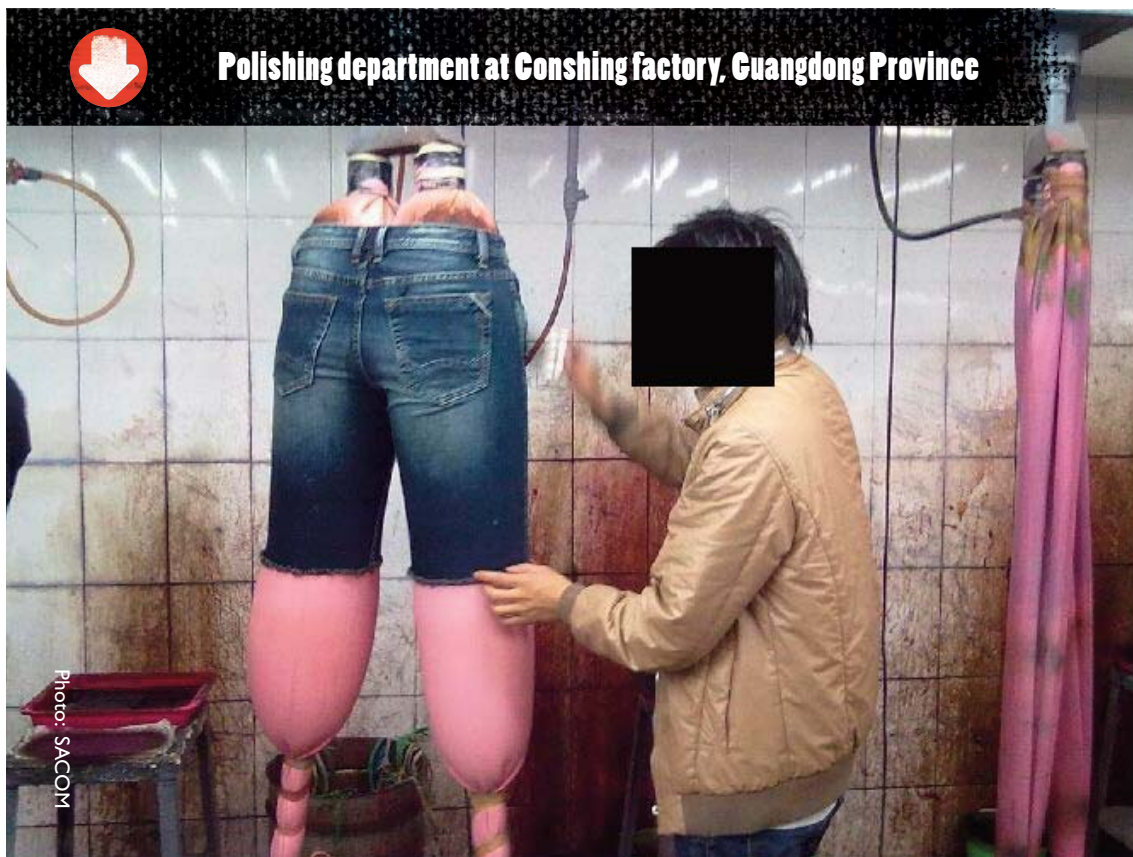
While there was also an official trade union at Yida, workers interviewed neither knew nor cared about the work it might be undertaking. However, Yida has established a number of grievance channels including a counselling centre, the use of qq (an MSN-like communication tool) and SMS texting. Yida also hosts worker forums every few months. During these forums, Yida randomly selects workers as representatives and invites them to the forum to gather the comments and criticisms of the workers. Yida posts the minutes on a factory bulletin board.

### 3.10 Auditing failures

All the factories surveyed revealed serious problems in potentially misrepresentative auditing practices. For example, Conshing has regular social audits and factory inspections by third parties. However, workers claimed that they are trained how to respond to interview questions about whether the factory complies with minimum labour law standards prior to the auditor's arrival. They are strongly urged not tell the truth about their actual working conditions, especially concerning wages, working hours and days off. Management convinces employees that criticism of Conshing's practices will lead to a decrease in orders, which will in turn mean lower wages. In other words, employees are urged to 'help out' by putting on a good show. "Factory inspections are merely a showcase," some of the more experienced workers explained. "We don't take them seriously and

I don't think the auditor does either. In any case, we don't believe that they will lead to improvements in our working conditions."

Tianxiang's workers generally had no idea about codes of conduct but did know that in March of the same year three clients had performed factory inspections. But as one male employee explained, "Management ordered us not to say anything wrong, threatening us with fines of ¥500." Golden City workers said that the factory undergoes regular auditing and inspections by Yida's buyers and some of Gloss Mind's chief buyers. However, they too said they were coached in how to respond to interview questions. Most inspections generally cover only issues regarding the shop floor, cleanliness and hygiene, with no direct focus on occupational health and safety.



# 4. Killer Jeans campaign

**Turkey was the first country to recognise the negative health effects of sandblasting in the garment industry, when Turkish doctors sounded the alarm about the silicosis hazard among garment sandblasters. In 2005, the first major study to link the process of sandblasting jeans to silicosis was published. At the time of the writing of this publication, some 52 garment workers are known to have already died from the effects of silicosis in Turkey. There have now been 1,200 registered cases – although doctors suspect the actual number is much higher.**

Many Turkish garment workers, like their counterparts in China, were migrants who returned to their home villages once they became sick, and thus many cannot be located. One frightening factor that makes action all the more urgent is the speed with which the disease progresses. In the coal mining industry, for example, silicosis only develops after several decades of regular exposure. But in the case of garment workers, it was found that the massive levels of sand in the air and the force with which the particles were expelled during the blasting process led to acute silicosis, the form which takes hold much more quickly. Garment workers have been known to develop silicosis within months of starting their jobs as sandblasters.

In response to pressure on the Turkish government by the Solidarity Committee of Sandblasting Labourers, a committee established by workers and activists, Turkey imposed a ban in March 2009 on the use of sand and silica powder and crystals in the blasting process of denim and other textiles. However, garment producers responded to this ban by simply moving their operations to other countries such as China, Bangladesh, India, Pakistan and parts of North Africa.

In 2010 the Clean Clothes Campaign (CCC) launched its Killer Jeans campaign, advocating a total ban on sandblasting in the production of denim garments. The CCC and the Solidarity Committee of Sandblasting Labourers in Turkey demanded that major denim brands and retailers issue a public ban on sandblasting in their supply chains. The International Textile, Garment and Leather Workers Federation (now part of the global union federation IndustriALL) had also been calling for such a ban since 2009.

## 4.1 Brand reactions

Both Levi Strauss and H&M made public announcements declaring that they were going to phase out sandblasting from their respective supply chains. In the year that followed, many other brands followed suit, including Armani, Benetton, Bestseller, Burberry, C&A, Carrera Jeans, Charles Vögele, Esprit, Gucci, Just Jeans Group, New Yorker, Mango, Metro, New Look, Pepe Jeans, Replay, Just Jeans Group and Versace. However, some brands simply denied that there was any sandblasting taking place in their supply chains. Dolce & Gabbana has refused to publicly ban sandblasting and has failed to provide adequate information regarding its sandblasting policies.

The Killer Jeans campaign, coupled with CCC's Bangladesh report in 2012, led to dialogue with several brands that continued to claim they were not using or had never used sandblasting techniques in their supply chains. It was suggested that some of the factories investigated in Bangladesh were producing counterfeit jeans, which would not fall under the brands' responsibility, or that some of the violating suppliers were unlicensed and illegal subcontractors, which the brands were powerless to stop. Several brands requested more details about the garment factories with which they did

business, but none of them were willing to provide written guarantees detailing their responsibility for workers' safety and health. The campaign called on the brands to take responsibility for the regular monitoring of employees' health and for ensuring that former employees could be traced and tested for silicosis. Yet when brands were pressed for details regarding their actual initiatives, not a single one was willing to ensure regular and comprehensive check-ups for workers, or to take responsibility for current and former employees.

Research undertaken for the current report into denim production in China has revealed that regardless of whether a brand has 'banned' sandblasting or not, the practice continues – to the point that some factories have taken to hiding sandblasting machinery in sealed rooms to avoid detection, while others have simply subcontracted the procedure. The research also makes clear that the shift away from sandblasting does not necessarily translate into improved monitoring techniques regarding factory working conditions, nor has it led to any significant improvements in the provision of protective equipment for workers involved in the finishing of denim products using other methods.

Some companies that announced they were banning sandblasting from their own production lines also promised to monitor their suppliers. For example, H&M declared: "Even with our ban, we have decided to continue monitoring sandblasting conditions in supplier factories – even though the process is no longer allowed for H&M production. In this way we are continuing to minimise the health and safety risks to suppliers' workers from sandblasting, and overall to improve practices in the industry."<sup>19</sup> Yet such monitoring is unlikely

to reveal the true problems facing workers, and interviewees reported that there was almost no ongoing monitoring by the brands. The only major brand thus far that has worked with local trade union representatives and NGOs to examine the issue of sandblasting in their supply chain is Gucci.

There is an urgent need to increase workers' awareness of the health risks of sandblasting and other finishing processes. Our research also reveals that, although some workers were aware of the potential dangers of sandblasting, they were prepared to do the work for even meagre increases in wages. Training workers on how to use protective gear and on the hazards of the techniques and chemicals they are expected to work with must begin prior to the commencement of their employment. Full disclosure of all of the hazardous materials in use must also be provided.



**Many brands have announced their intention to ban or phase out sandblasting in their production lines. Yet as this report reveals, the practice of sandblasting continues – either covertly behind closed doors or through being subcontracted to less traceable or illegal factories. It is easy for a brand to promote a positive stance on sandblasting, but extremely difficult to monitor its compliance. No major brand has yet agreed to take full responsibility for the detection of silicosis in its supply chains, or for identifying potentially affected workers and treating them.**

Consumers are generally supportive of the campaign to end sandblasting, but it is almost impossible for them to know whether a pair of jeans has been sandblasted or not. The conclusion drawn from this report, as well as from previous research in other countries, is that voluntary bans on sandblasting are not enough. Governments across the world must introduce statutory bans on sandblasting, and guarantee the enforcement of those bans.

Even where the practice of sandblasting has been discontinued, it has often been replaced by techniques such as hand-sanding, stone washing and chemical treatments, all of which involve their own health risks. Lightening denim with potassium permanganate exposes workers to dangerous fumes, but few receive adequate safety equipment to combat the risks of long-term exposure. Brands need to be fully aware of the health effects of all the finishing processes used in their production lines, and should ensure that all workers involved in the production of their denim receive proper training, information and safety equipment related to the specific processes they are engaged in.

Many workers remain unaware of the full health risks of working 12-hour shifts in dusty conditions, and must be able to criticise their working conditions as well as assert their right to take paid sick leave and receive proper medical care. Those workers that do recognise the health risks of hazardous production processes are often forced to disregard the risks as a result of financial need caused by low wages and rising living costs. In all respects, workers need effective trade union representation and worker dialogue in order to be able to take forward their rights. In addition, brands and their suppliers must take full responsibility for providing proper medical care for all workers exposed to silica dust and other hazards in denim factories.

## **We therefore make the following recommendations:**

### **1) Governments**

We call on all national governments to introduce an immediate ban on sandblasting, and to monitor its enforcement and the proper application of OHS rules to improve the working conditions of workers in the denim industry. Governments should, furthermore, support all workers in obtaining adequate social and medical assistance, as well as disability pensions from the state.

### **2) Brands**

We call on all brands to commit to a ban on sandblasting in their own production lines, and ensure that the ban is complied with in practice. Brands should also press for the phasing out of sandblasting in their suppliers' other production lines, and assist them in finding safe alternative solutions. Brands should not work with suppliers that refuse to phase out sandblasting across all their production lines. Brands must ensure that

proper training and adequate safety equipment are provided to all workers employed in alternative processes such as hand-sanding, polishing, fringing and chemical treatments. Brands should undertake comprehensive risk assessments when introducing any new production methods, using the UN Guiding Principles and Framework as their guide as they undertake extensive due diligence prior to embarking on new or revised techniques.

Brands can play a further role in ending the practice of sandblasting by adapting their fashion designs away from distressed denim to curb demand, or introducing genuinely safe alternative methods that will achieve a similar look. In addition, brands can support an end to sandblasting by altering their suppliers' production schedules and eliminating tight deadlines to ensure that sandblasting becomes increasingly unnecessary. Unit prices and purchasing practices should reflect fair payment for workers, in order to remove the need for risk taking in the quest for sufficient pay. Brands must work with suppliers to ensure that workers are paid a living wage for regular working hours of no more than 48 hours a week.

Brands should introduce comprehensive monitoring processes of their supplier factories in cooperation with trade unions and NGOs in production countries. Moreover, brands should strive for much

higher occupational health and safety standards from their suppliers. Brands should furthermore support their suppliers in providing adequate medical examinations and diagnostic procedures to ensure early diagnosis, treatment and compensation for workers suffering from silicosis or other related diseases. Existing problems and illegal working conditions in factories should be adequately remediated, in conjunction with NGOs and independent trade unions. Freedom of association should be guaranteed to enable workers to voice and help rectify unsafe practices.

### 3) International bodies

We call on the ILO and WHO to include denim production chains in their global programmes focusing on the eradication of silicosis.

We call on the EU to explicitly ban the practice of sandblasting in the garment industry, and to implement an import ban on sandblasted jeans. We further call for the extensive reports of ongoing sandblasting practices within the EU itself – notably in Portugal and Italy – to be investigated, and the practice stopped.

Multi-stakeholder initiatives and businesses should ensure their members implement a total ban on sandblasting throughout their supply chains.



## FACTORY DETAILS AND RESEARCH METHODOLOGY

### 1. Zhongshan Yida Apparel Ltd

Address:	Shunjin Industrial Park, Banfu Town, Zhongshan City, Guangdong Province, China
Owner:	Crystal Group
Website:	www.crystal-yida.cn
Estimated workforce:	4,000
Clients:	Levi Strauss, H&M, Gap, Hollister, Wrangler, Old Navy, Faded Glory, Duo

SACOM researchers conducted research at Yida in March and November 2012, via off-site interviews of 50 workers and in-house factory investigation.

### 2. Conshing Clothing Group Co Ltd

Address:	Conshing Industrial Park, Shapu, Xintang Town, Zengcheng, Guangzhou City, Guangdong Province, China
Owner:	Hong Kong Shing Hing enterprise
Website:	www.conshing.com.cn
Estimated workforce:	3,000
Clients:	Lee, Wrangler, Jack & Jones, Only, Phard, CLRIDE.n, Vero Moda, Lee Lang, Cabbeen

SACOM and IHLO researchers conducted off-site investigations around Conshing in spring 2012, September and November 2012. About 50 workers were interviewed, including employees in the sandblasting department. In addition, one of the researchers worked in the factory itself to collect first-hand information. In 2012, Conshing's website listed many other brands as clients, including Polo, D&G, CBA, A&F, Hollister and others. Shortly before this report was published, the website was revised to give a shorter list.

### 3. Dongguan Tianxiang Garment Co Ltd

Address:	Xinji Industrial Zone, Machong Town, Dongguan City, Guangdong Province, China
Estimated workforce:	400
Clients:	Hollister and American Eagle

In March and November 2012, SACOM researchers carried out investigations at Tianxiang. Around 40 workers were interviewed. There is no information about the Tianxiang factory available on the internet.

#### 4. Dongguan Golden City Washing Sandblast & Brush Factory

Address:	Huayang Industrial Park, Machong town, Dongguan, China
Owner:	Local owner, Dongguan
Estimated workforce:	300
Clients/ upstream buyers:	Levi's (also second tier subcontractor of Dongguan Gloss Mind Apparel Co Ltd and Zhongshan Yida Apparel), Yishon, Zhenzhi Jeans; 50% of total production is for export, while all products for Gloss Mind and Yida are for export

IHLO interviewed 10 workers, including sandblasters, in January and October 2012. The main buyer from Golden City is Yishon, with 70,000-80,000 pieces monthly. Both Yishon and Zhenzhi require sandblasting. Products for Yida (and Levi's) have replaced sandblasting with hand sanding and other techniques. Orders from Yida have decreased since the start of 2012.

#### 5. Dongguan Gloss Mind Apparel Co Ltd

Address:	Xialingbei Industrial Area, Liaobu Dongguan, China
Owner:	Hong Kong enterprise
Estimated workforce:	500-600
Clients:	Levi's

IHLO interviewed some 10 workers from various departments in spring 2012.

#### 6. Weiqiang Washing Plant

Address:	Zhetai Industrial Park, Baoan, Shenzhen, Guangdong Province, China
Owner:	Hong Kong enterprise
Estimated workforce:	200
Clients:	Yida, Hungying Garment Factory and Baolifa Garment Factory

IHLO interviewed 10 workers, including sandblasters, at Weiqiang in Shenzhen in 2011 and autumn 2012. Yida was the main upstream buyer from Weiqiang, although Yida's parent company Crystal Group has stated that that relationship has now been terminated.

The information collected in this report is based on detailed interviews with workers within the factories, as described above, as well as information from company websites and other sources. In March 2013 we sent out a draft copy of this report to brands for response, and received responses from the following companies:

#### **Bestseller (Vero Moda, Jack & Jones, Only)**

While Bestseller brands Vero Moda, Jack & Jones and Only are still listed on the revised Conshing website, as noted above, Bestseller stated that one of its other brands, Pieces, was not a buyer at Conshing and that it had been removed from the list of clients on the Conshing website. Bestseller also stated: "In 2010, BESTSELLER banned the use of sandblasting on our products in all production countries and since then, we have had great focus on the issue. The ban was clearly communicated to all suppliers and to our entire buying organisation, we checked that the buyers knew how to keep this ban, and we ensured that suppliers actually stopped sandblasting our products. This was done through training of our buyers and designers at BESTSELLER and through audits where we specifically checked sandblasting facilities. Apart from auditing, we have also developed posters demonstrating the ban which have been displayed at the factories. Currently, we are researching and using sustainable alternatives to sandblasting, such as ECO AGING, Ozone, lazer and other technologies for jeans finishing. The supplier Conshing is not sandblasting BESTSELLER products, but other clients' products, which we have not banned them from doing. However, they have now promised us to stop all sandblasting – also for other clients. We will of course check that they keep this promise."

#### **H&M**

H&M stated that sandblasting was against company policy, that it had not ordered any sandblasted products since 2010, and that the company has used hand sanding instead. H&M reported that it had learned from Crystal Group that Yida had eliminated sandblasting in mid-2009 and disposed of the equipment in 2010, although H&M stated that evidence of that disposal was still awaited. Crystal Group had further informed H&M that Yida's relationship with Golden City had ended in November 2012 and with Weiqiang in November 2011. In addition, Crystal Group reported that "Stone wheel polishers will be provided with appropriate PPE"; that "With regards to chemical use, Yida will reinforce the chemical training already provided to the workers"; and that "Regarding access to health examinations, Yida used to provide health examination to workers of PP operation and who are in contact with chemicals. In 2012, they included all concerned workers in different sections including PP spray, hand-sand, chemical warehouse, etc. The reports were submitted to them and get their acknowledgement." H&M noted that "Yida are performing hand scraping for our denim production and has recently re-arranged a new workplace with better ventilation, including improvement on ergonomic design

of the workstations." On 21 March 2013, H&M released a list of "all our supplier factories with which we have a long term business relation – and thereby around 95% of our order volume for all our brands". While Yida itself was not listed, the parent company Crystal Group was included (listed as Crystal Martin in the H&M list). When asked about the omission, H&M responded that Yida was a subcontractor and thus did not have a direct business relationship with the company. The H&M list is available at: <http://about.hm.com/AboutSection/en/About/Sustainability/Commitments/Responsible-Partners/Supply-Chain/SupplierList.html>

#### **VF Corporation (Lee, Wrangler)**

VF Corporation's brands Lee and Wrangler are listed on the updated Conshing website, as noted above, but VF Corporation responded to us that it was "not familiar with Conshing". The company did, however, confirm that it has an active relationship with Yida, that it had previously been active with production at Weiqiang and that it had also "recently run some sample garments in Weiqiang's Shenzhen facility but do not have any plans to proceed with them."

#### **Ralph Lauren (Polo)**

As noted above, the Ralph Lauren brand Polo was previously listed on Conshing's website as a client of Conshing. Ralph Lauren responded that: "Ralph Lauren did not and does not have a relationship with the company or factory Conshing listed in your report. Ralph Lauren prohibits the use of 'sandblasting' on any of our products."

#### **Marks & Spencer**

The draft report was sent to Marks & Spencer (M&S), as one of the photographs taken inside the Yida factory showing the clients of Crystal Group included the M&S logo. M&S responded that the company does not source from Yida, but only from its parent company Crystal Group.

#### **Levi Strauss & Co**

Levi's responded in detail, stating that it had been "clear with our suppliers that we do not allow sandblasting and we do not place orders for sandblasted products". Levi's also stated that it had taken the additional step of "requesting supplier to remove all blasting tools and abrasives from the site where LS&Co. products are manufactured". Levi's confirmed that Yida is one of its supplier factories, that it had "verified that Yida eliminated sandblasting process in 2010" and that Yida had "stored its six sandblasting machines in a warehouse until April 2012 when they disposed of the machines as abandoned property". Levi's confirmed that Golden City is a supplier factory, and significantly, given the workers' testimony in this report, Levi's stated that: "In 2011, we found a similar situation as your report outlines that sandblasting equipment was being hidden during our factory assessment." Levi's noted further: "In January 2012, factory management informed us that they had removed all sandblasting equipment and sent photos as

proof. We conducted a validation to confirm that no sandblasting equipment remained in the factory". Levi's confirmed that Gloss Mind is a supplier factory and that our report was accurate in stating that no sandblasting takes place on the Gloss Mind premises. Levi's further stated that neither Conshing nor Weiqiang had been suppliers for Levi's or Yida; however, this latter claim is contradicted by the information supplied to H&M by Yida's parent company Crystal Group, which confirmed that Weiqiang had indeed been a subcontractor of Yida.

Workers at Weiqiang have also confirmed to us that, whether or not it was known to Levi's, Yida had previously subcontracted the production of Levi's jeans to Weiqiang over many years.

The following brands were contacted but did not respond: Guess, Dolce & Gabbana, American Eagle, Texwood, Clride.n, CBA, Walmart (Faded Glory), GAP (Old Navy), and Abercrombie & Fitch/Hollister.

## Notes

<sup>1</sup> Definition adopted by the Joint ILO/WHO Committee on Occupational Health at its 1st Session (1950) and revised at its 12th Session (Geneva, November 1995)

<sup>2</sup> *Health and life at work: A basic human right*, Geneva: ILO, 2009

<sup>3</sup> *Deadly Denim: Sandblasting in the Bangladesh Garment Industry*, Amsterdam: Clean Clothes Campaign, 2012

<sup>4</sup> The use of crystalline silica for blast cleaning operations was banned in Britain in 1950, and in the European Economic Community in 1966.

<sup>5</sup> *Report on Invisible Victims of Development – Workers' Health and Safety in Asia*, Hong Kong: Asia Monitor Resource Centre, 2012

<sup>6</sup> The Law on the Prevention and Treatment of Occupational Diseases in China, Article 32, states: "The labourers engaged in hazardous occupations shall have an occupational health examination before they start work, during their career at this job and upon their departure. The factory shall furthermore inform the workers of the examination results. The factory shall compensate for all the expenses incurred for the occupational health examinations."

<sup>7</sup> Becky Fung and Francine Chan, 'OSH Status Report: China', Hong Kong: Asia Monitor Resource Centre, 2011

<sup>8</sup> Ibid.

<sup>9</sup> See, for example, the cases of Feng Xingzhong and Deng Wenping who died at the age of 36, three years after starting work as gem cutters. Also see the overview of the gemstone silicosis campaign: <http://www.lac.org.hk/en/node/86>.

<sup>10</sup> *Report on Occupational Disease Prevention and Control*, Ministry of Health, 2009; cited in Fung and Chan, op cit

<sup>11</sup> *Dongguan Daily*, 2 August 2011, cited in Fung and Chan, op cit

<sup>12</sup> 'Yida jeans plant takes more green steps', Crystal Group press release, 7 April 2011

<sup>13</sup> <http://www.conshing.com.cn/en/about.asp>; although Lee and Wrangler are listed on the Conshing website, VF Corporation (the brands' parent company) has stated that it is not familiar with the factory.

<sup>14</sup> As stated on the official Levi's supplier list, and confirmed by the company in correspondence during March 2013.

<sup>15</sup> For a Conshing promotional video advertising its sandblasting capacities, see [http://v.youku.com/v\\_show/id\\_XMjUwMDkzNzI4.html](http://v.youku.com/v_show/id_XMjUwMDkzNzI4.html)

<sup>16</sup> Rates given apply to 2011/12

<sup>17</sup> The Asia Floor Wage (AFW) campaign is a collective Asian demand for a 'floor' or living wage for Asian garment workers who manufacture the majority of the world's clothing in the global garment supply chain. It is based on a family's basic needs including food and non-food expenses. The AFW Alliance urges retailers and brand-name companies to enter dialogue with labour organisations in Asian countries to address poverty wages; for more information, see [www.asiafloorwage.org](http://www.asiafloorwage.org)

<sup>18</sup> China's Labour Law stipulates that overtime shall not exceed one hour per work day, or, in special circumstances and provided that the health of the employee is not affected, not exceed three hours per day and a total of 36 hours per month.

<sup>19</sup> 'Joint ban on sandblasting of textiles', H&M Reporting & Resources: Case Studies, at [about.hm.com](http://about.hm.com)



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## Clean Clothes Campaign

International Secretariat

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