The Cost of Counterfeit Metal Construction Materials

About the Author

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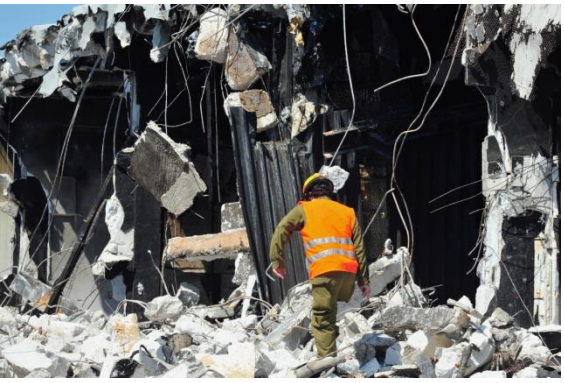

In 1987 and 1998, two separate construction q accidents killed two people in the United States. In both cases, counterfeit bolts were suspected of failing. In 2007, an imported counterfeit cement kiln ruptured while in operation in Canada, killing two workers. The Electric Power Research Institute reports that two counterfeit stop-check valves were found at a U.S. nuclear power plant in 2007. These incidents all involved counterfeit steel.

A recent study commissioned by the Construction Industry Institute (CII), in Austin, Tex., cited a 2003 report that put the overall counterfeit goods market at more than $1 trillion. And not all the fakes were knockoffs of Gucci handbags and Rolex watches. Construction materials were high on the list of counterfeit imports, chiefly steel products.

The CII study notes: “Although there are many areas of concern related to product integrity, the potential impact of counterfeit products to plant performance, plant life cycle, safety, [and] structural and product integrity was the focus of this investigation. While there is much literature on counterfeiting in general, there is almost nothing documented on counterfeiting relative to the construction industry.

For example, the counterfeit ‘industry’ does hundreds of billions of dollars of business annually; however, the scope of counterfeiting within construction is unknown. What is known is that counterfeit product shave caused significant negative impacts to safety, project schedules, overall costs and quality of construction.”

Introduction - *History*

Counterfeiting is as old as manufacturing itself. As soon as people began minting coins for currency, someone else started making fake copies.

Afterwards, any valuable object that could be copied at a lower cost with cheaper material soon was being sold in the marketplace. Up until modern times, counterfeiting was widespread and not confined to any geographic region.

However, with the rise of globalization following World War II, counterfeiting became an international problem, much of it emanating from Japan's developing manufacturing-based economy.

As Japan's economy matured in the late 1960s, the epicenter of the counterfeiting industry moved to Korea.

As Korea's economy then improved, the bulk of the problem moved to China, where it resides today, according to the CII.

Introduction – *Modern Day*

In the mid-1980s, U.S. Customs and Border Protection estimated that counterfeit products comprised nine percent of total world trade in manufactured goods.

Today, more than 80% of counterfeit products originate in the People's Republic of China (PRC or China), according to the International Anti-Counterfeiting Coalition (IACC).

Among these are bulk items used in the construction industry in the United States and Canada, including everything from little items such as bolts and fasteners to heavy equipment like scaffolds and cranes. Other nations implicated in widespread counterfeiting operations by U.S. Customs include Taiwan, Hong Kong, the United Kingdom, and Pakistan.

Construction Industry Counterfeiting

Construction Industry Institute®

In 2011, the Construction Industry Institute (CII), alerted by one of its prominent members, formed a task force charged with investigating the scope of counterfeiting in the construction industry. Named Research Team 264 (RT 264), this group from the University of Florida (Gainesville) and Tsinghua University (PRC) conducted a scientific survey, the first of its kind, that found the "threat of counterfeit products entering the supply chain on construction projects is undeniable and should not be underestimated."

"The team's focus was on the production of knock-off branded industrial materials and equipment that appear genuine in every way, but that are produced without regard to performance integrity," the CII noted. "The team also investigated the production of non-branded raw materials or commodity items that have been deliberately (and often toxically) tainted to produce deceptively favorable test results."

RT264 was tasked with analyzing the causes of the counterfeiting and making recommendations to diminish it. We will look at these.

Construction Industry Counterfeiting - *Causes*

The CII investigators found that even though many countries have signed agreements to protect intellectual property rights, counterfeit products are more available than ever in both world and national markets.

Their research revealed that the level of profitability in counterfeiting is relatively high, while the level of risk is relatively low. This is due to the low priority national law enforcement agencies attach to these types of crimes, as well as lawmakers attaching low-level penalties to them.

While RT 264 did not establish a link between organized crime and construction counterfeiting, its research strongly suggests that the industry's global supply chain is vulnerable to infiltration by these increasingly globalized crime networks.

Then there are the twin problems of corruption and lax regulations in counterfeiting source countries. The CII researchers noted that several of the low-cost sourcing countries had little or no regulatory oversight of construction materials, as well as government officials who did not understand the nature of materials production or were lenient or corrupt. Plus, some interviewees in China said that their government, in some cases, lacks the power to enforce rules that could stem the flow of counterfeit goods from their country.

The RT 264 researchers also found that cultural differences play a profound role in the counterfeiting phenomenon. Counterfeiters in China and other countries very often believe that their cheaply produced products are simply "good enough" to do the job. We'll look at this mind set in detail in a separate section.

Construction Industry Counterfeiting - *Applications*

The CII study found that raw, substandard steel was the most counterfeited commodity among the materials it inquired about from interviewees. Here is the rest of its Top Ten list.

1. Steel
2. Fasteners
3. Valves
4. Pipe
5. Circuit breakers
6. Rotating equipment parts
7. Electric equipment
8. Pipe fittings
9. Pressure vessels
10. Cement

Construction Industry Counterfeiting – *Metals*

As noted, the CII research found that steel was the most commonly counterfeited construction material. One interviewee noted that using low-grade steel in place of structural steel reduced costs by half, basically boosting profits and allowing the counterfeit manufacturer to undercut the authentic competition.

The research found no evidence of counterfeit aluminum production, even though China is by far the world's leading producer of primary aluminum. China is currently producing aluminum at a rate of 24 million tons a year on an installed capacity of 28 million tons (or about 46% of global production), contributing to a worldwide glut in aluminum (where inventories stand at 12 million tons, according to the publication MarketWatch).

Of note, global steel production is experiencing a similar overcapacity problem, in which worldwide supplies stand at an excess of 200 million tons, according to the Wall Street Journal. This fact could be an indicator that counterfeit steel production from all sources should be becoming increasingly less profitable.

Construction Industry Counterfeiting – *Supply Chain*

Surprisingly, most of the counterfeit items identified in North American construction supply chains came from vendors on the companies' approved vendor list. Many conscientious U.S. companies were not regularly updating their supplier lists, and they were not testing materials because they thought they were dealing with a trusted source, according to the leader of RT 264, Edward Minchin, Jr., of the University of Florida.

One of the more interesting findings made by RT 264 was that overseas counterfeiters are using otherwise trustworthy ports of call in countries such as the United Kingdom to transship their illegal goods. This trend has grown to such dimensions that the U.K. has found its way on to the U.S. Customs watch list of suspected counterfeiting source Nations in fifth place. By mixing bogus goods with legitimate ones, the counterfeiters hope to make the job of detecting their shipments that much more difficult for customs officials.

Much of the RT 264 report focused on steps that manufacturers should follow to reduce the risk of counterfeit materials ending up in their supply chains. We will look at these recommendations in a following section.

Economic Costs

It is difficult to break out the financial costs of counterfeit metal construction materials from the estimated overall costs of counterfeit materials imported by North American manufacturers.

In 2005, a report from the National Chamber Foundation, part of the U.S. Chamber of Commerce, estimated that overall counterfeited goods would represent about $400 billion in 2013 in the U.S. alone. Globally, the International Chamber of Commerce puts a dollar figure on the problem at $1 trillion.

Human Costs

Legitimate manufacturers invest in research and development, quality materials and manufacturing processes, and they work to meet the conformity assessment schemes of their markets. They work to build brand recognition and to foster goodwill with their end users. The counterfeiters that are their direct competition rely on stealing their brand names and profiting from their goodwill and reputations, resulting in the following:

- Direct loss of sales
- Loss of goodwill
- Irreparable damage to corporate brand/reputation
- Trademark dilution
- Costs of protecting and enforcing their intellectual property rights.

Counterfeiting and piracy are costing the U.S. public billions of dollars every year. But the problem is more insidious than that. It damages investment and innovation; has potentially devastating economic consequences for small businesses; puts a severe strain on law enforcement agencies; nearly always escapes taxation; threatens public health and safety; diverts government resources from other priorities; and has links to terrorism and organized crime.

Human Costs – *Employment Loss*

"Good-paying jobs are the lifeblood of our nation's economy. Increasingly, counterfeiters and pirates are sapping that lifeblood through illegal products that are costing this country's workers their livelihood," the National Chamber Foundation writes.

In a 2009 report, the U.S Immigration and Customs Enforcement (ICE) agency estimated that each year, counterfeiting costs U.S. industry about 750,000 jobs. And the International Chamber of Commerce puts the number of legitimate jobs lost to counterfeiters at 2.5 million worldwide.

Human Costs – *Accidents and Failures*

Reliable statistics on the number of accidents caused by counterfeit construction materials are hard to come by in North America. However, there are many anecdotal reports from overseas that point to the serious consequences that bogus construction materials can cause.

- The recent catastrophe in Dhaka, Bangladesh, in which a garment factory collapsed, killing 1,100 workers, has been partially blamed on “extremely poor quality” construction materials.
- Since 2011, eight bridges have collapsed in China, likely the fault of corrupt local officials approving the use of “substandard materials” in their construction.
- The Shershah Bridge over the Karachi Northern Bypass in Pakistan collapsed 25 days after its inaugural opening in 2007, killing five and injuring many others. Counterfeit steel bars were suspected as a cause.

“Close Enough Is Good Enough” Philosophy

The CII report found that one of the major reasons that makers of counterfeit construction materials continue to produce cheaply made goods is that they simply lack awareness of the importance that standards play in the minds of their customers. This is particularly true in cases where there is a cultural divide between Asian suppliers and Western manufacturers.

“[One] source of counterfeiting is a lack of knowledge and understanding of foreign standards on the part of Chinese manufacturers,” the Researchers wrote. “Although a project may dictate U.S. or E.U. material standards, one interviewee noted that Chinese manufacturers will often continue to use their national standards regardless of whether they meet the project’s standards. The attitude is that products that meet national standards are good enough. Other interviewees [said] that Chinese manufacturers are used to supplying products according to their standards, not their clients’ standards.”

"Close Enough Is Good Enough" Philosophy - *Continued*

The RT 264 team found: "[T]here are significant differences in the attitudes toward counterfeiting exhibited by people living and working in North America and those living and working in the PRC.

The research, based on almost 200 interviews, revealed that most Chinese manufacturers believe that close enough is good enough' and many Chinese have a hard time understanding why that is not acceptable to the U.S. market.

Of course, many U.S. and Canadian companies have had great success procuring quality material and products from China, but most have achieved this success through extensive education and training of the Chinese manufacturer and supplier, and excruciating diligence in the oversight of their entire supply chain.

Efforts to Block Counterfeit Imports

The U.S. Chamber of Commerce says that it is working to educate businesses, the media, and lawmakers about the growing threat of this issue. It is working with manufacturers, retailers, and law enforcement to disrupt the ability of counterfeiting networks to use legitimate distribution channels.

The International Anti-Counterfeiting Coalition has stated that it has focused significant efforts on the engagement of state and local law enforcement in the fight against counterfeiting, perhaps most notably in the development of law enforcement task forces at the city level in New York and Los Angeles. "The IACC and its members have found law enforcement in states throughout the country to be enthusiastic about the issue, though often less familiar with the intricacies of [counterfeiting] cases than their federal counterparts," the group has reported.

Efforts to Block Counterfeit Imports – *CII Report Recommendations for Testing & Inspection*

- Consider connections (fasteners) such as bolts as pressure equipment and not just as "commodities."
- The PMI [positive material identification] program should include [a] witness and/or monitoring from a quality standpoint.
- In foreign countries, it is actually preferable to have a qualified ex-patriot perform the source inspection when possible. Minimally, supervisory visits from a qualified ex-patriot should be made.
- Consult specialists, such as materials and corrosion engineers, whenever in doubt about product integrity.
- Material Test Reports (MTRs) should be requested for materials. The MTRs should be matched to the heat numbers or heat codes on the materials.
- If the investigation leads you to believe the goods or materials are counterfeit, or if the integrity of the goods or materials cannot be verified, all members of the project (purchasing, inspection, engineering, etc.) should be made aware of the issue and a conscious decision must be made as to the potential risks and the disposition of the goods and/or materials. This evaluation and final determination should be documented and communicated for lessons learned.

Efforts to Educate Manufacturers and the Supply Chain

Supplier pre-qualification, manufacturing surveillance, resident inspection, third-party verification, and unscheduled in-process inspections are all activities that manufacturers need to diligently perform or procure if they are to maintain supply chain integrity.

Here are seven recommendations from the CII for the industry and the individual contractor to fight the problem:

- Confirm and verify that every link in the supply chain is secure and observed. Responsible manufacturers have designed and implemented highly reliable and secure distribution networks that ensure product integrity. For branded products, trust only manufacturer-authorized distributors. The use of brokers, re-sellers, and unauthorized distributors (at any level in the supply chain) are common entry points for counterfeit products. An immediate supplier could be trustworthy, but could also be a victim of counterfeit entry points upstream. For non-branded products, a holistic approach to the more traditional quality control (QC) techniques is instrumental.

- The industry as a whole should adopt a zero-tolerance policy regarding counterfeiting. Report all incidences of counterfeiting to the appropriate authorities and never fail to support any law enforcement agency's effort to prosecute to the full extent of the law.

- Train/educate procurement, quality management, and field personnel on the dangers of counterfeit goods. Teach them how to prevent their entry into the supply chain and to mitigate the damage they do if they are already present.

Efforts to Educate Manufacturers and the Supply Chain - *Continued*

- Train/educate customs officials and other law enforcement agency personnel regarding measures against counterfeit construction goods and materials—not just the higher-profile retail products.

- Establish more stringent supply-chain management activities, such as enhanced supplier pre-qualification, more diligent sourcing practices, manufacturing surveillance, resident inspection, third-party verification, unscheduled in-process inspections, and any other exercises that will give owners and contractors more confidence in the integrity of the products they're paying for.

- Use effective positive materials identification (PMI) processes—or other methods of validation—extensively throughout the supply chain.

- Put more emphasis on documenting the quality and integrity of the sourcing of raw materials and commodity items.

Our Stand on Counterfeit Materials

At Corrugated Metals, we adhere to the strictest guidelines in securing our lines of supply against counterfeit materials. We sell only prime aluminum and steel products.

Every product we manufacture is accompanied by mill certification reports, which document the quality of the metal.

Every product is checked for gauge, length, width, coverage, surface, and other quality parameters. And we make it our business to be the best-informed and most proactive company in the roll forming and corrugated metal field.

Browse Our Product Brochure

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Resources

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Resources - *Continued*

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