

The Usage of Counterfeit Materials in Grey Structures in Peshawar Construction Industry

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ABSTRACT

The construction industry can be categorized as one of the most important Industries in modern society. Unfortunately, these days, the construction industry has been affected by a menace of counterfeiting. Author has found that counterfeiting has become a significant and growing problem within the construction industry. In order to analyze the impact and effects of counterfeit materials and their usage in the construction oriented industry of Peshawar (KP).The opinion of 96 respondents of the Peshawar construction industry (client, contractor and consultants)were analyzed. From the study it was observed that the problem of counterfeiting was increasing where the factor was ranked 1st through the Relative importance index and the least was observed as counterfeit products/goods are durable and reliable in the construction industry. To maintain an updated approved vendor list, verify as high in the supply chain as possible.

Keywords: Construction Industry; Counterfeiting; Relative Importance Index; Vendor List; Impact.

INTRODUCTION

The construction industry can be categorized as one of the most important Industries in modern world. The affirmative economic blow of the construction industry on the worldwide financial system, cannot be calculated easily. The construction industry provides many benefits to the global market the establishment of jobs, the construction of new infrastructure, economic growth, and advances in knowledge. unluckily, the construction industry in recent times has been affected by the calamity of counterfeiting.[1].

The counterfeiting of products is defined as “the unlawful replication of trademarked or copyrighted wares, [which] ills genuine producers through lost sales.” up to date investigations have shown the existence of counterfeit products in the supply chain of the construction industry. This subject affects the excellence of the projects undertaken, leads to financial losses, and risks lives in the practice.[2]

Many trustworthy contractors are trying to build a practice of buying from a sound supply house, but when these supply houses do not have everything that a contractor required, the internet and a risky order is simply a tick away. Nobody is protected to the communal or unlawful action, including structure owners, who have a liability to make sure that what is installed in their structure would not hurt any occupants. 95% counterfeit goods in Pakistan

come from China, and more and more companies are realizing, what you pay for may not always be what you get.[3]

Although China is usually acknowledged as the starting place of these evils, preliminary research has indicated that China alone is not the cause of these problem products. While over 85% of the problem is likely to derive in China and Hong Kong, nations conventionally linked with the US are also well-known as source nations. In fact roughly five percent of the problem products apparently originate in US collaborator nations Taiwan, Pakistan and UK.[4]

Due to the problems mentioned above, many questions have been raised concerning to the counterfeit products worldwide, principally in the construction industry. The following are some of the important questions to be answered.

- What are the up to date risks of counterfeiting to the construction industry?
- What are the key products of the construction industry that are superficial to be at risk to counterfeiting?
- Which are the unacceptable or counterfeit construction items?
- Which processes or quality control method are used to certify product reliability in construction industry?
- What are the most valuable defensive actions against counterfeiting in construction industry?

LITERATURE REVIEW

Product counterfeiting can be defined as off the record replication of copyrighted / trademarked products and their costs against legal producers through lost sales. Manufacturing of counterfeit products and such industries has evolved into a disastrous setback on international scale. By the mids of 1980s, it was estimated that 9% of global world trade of manufactured goods comprised of counterfeit goods. Even though a numerous number of countries around the globe have signed treaties and agreements to guard against intellectual property forfeiting, but counterfeited products nowadays are more accessible than ever in international market.

According to the World Trade Organization statistics, global trade increased by a marginal 47% in the era between 1990 to 1995 in addition this globalization also resulted in an alarming boom of 150% in the Trade of forged goods. By the year 2002, with the introduction of counterfeit goods manufactured and marketed on a local scale within countryside area, the total worth of counterfeited products that were marketed on a global scale was estimated to be more than 1 trillion US dollars [5]

In the year 2003, Statistics for Republic of China indicated a considerable incline as compared statistics from the year 2002, whence 49% of all the forged and infringing products were supplied by China which result in detained goods of worth \$48 million US dollars out of the total 98 million dollars of unlawful goods, by the United states Customs agencies [6].Even though Product counterfeiters around the globe have been identified, but the trade of counterfeiting at China has been forewarned for playing a key role in creation of drastic counterfeiting setback in global history and still appears to be on an alarming incline. Survey conducted by Chinese government in the year 1998 estimated a value of 16.1 billion US dollars worth of counterfeited goods that were created and marketed locally inside China. [7]

In aviation trade, Depending on the size of an aircraft, it is employed to carry more than 300 individuals and goods. unfortunate crash of a single aircraft a piece can have terrible consequences. A Numerous number of airlines have incidentally managed to acquired second-

hand or forged spares into their spares inventory, and some unofficially confess these blasphemous acts in hushed words.

In the year 1998, official survey conducted by the Organization for Economic Co-operation and Development emphasized that the warehouses of US airlines inventoried as much as about 1 billion US dollars worth of unapproved airline spares. In the year 2001, a journal of Lawrence Livermore National Laboratory concluded that as much as 2 billion US dollars worth of unapproved spares were sitting on the shelves of aircraft spares manufacturers and suppliers. [8] In the year 2004, FAA estimated that about 2% of the total 25 million parts installed in aircrafts on global scale are forged. This counterfeiting network has raised considerable concerns of public safety. [9] After conducting two years research on more than 15 cases in February 2008, Federal Bureau of Investigation concluded that about more than 3500 forged spares network of components worth was estimated to be more than an estimated value of 3.5 million US Dollars. This research led to more than 10 convictions and a restoration of more than 1.7 million dollars restoration to government funds.

This research pinpointed to the scam of supply of forged Cisco routers, and other electronic gadgets, that had been supplied to U.S Marines, Navy, Air force, and Federal Aviation Administration and even FBI itself. [10] It was estimated by the National Electrical Manufacturers Association (NEMA) estimated that about 750,000 counterfeited ground connectors and other spares were imported from Republic of China and India in the year 2007 [11].

it was revealed by a major US electrical parts manufacturer that about 1 million forged circuit breakers were sold on their name in a trial of lawsuit against its US distributors in the year 2005 and 2006. in a short span of time, this spares manufacturers filed about 13 lawsuits against 27 US based companies selling forged spares where in most of the cases, investigation traced the origin of these goods back to Chinese manufacturers [12]. Current research also found that forfeited steel products, including untreated steel billets, valves, pipes, and fasteners made of steel have been known to be supplied in an alarming numbers throughout US in recent years. [13]

The trade of Counterfeiting, is an alarming updated development in the field of controlled crime, with the human trafficking and drug trade routes aligning in these cases [14]. Such as this case of research, no ties have been pinpointed among counterfeiting and controlled crimes in the construction and development industry.

RESEARCH METHODOLOGY

The main scope of this research is analysis of interview data along with statistics acquired by physical inspection, as well as identification of perceptions and opinions of the different individuals toward product counterfeiting.

Questionnaire

Details of the participants were collected by the author before starting on these questionnaires. Most of the questionnaire participants consisted of higher up officials, who were regarded as the best in their respective fields of service. These participants possessed the relevant expertise and knowledge that could greatly help out the researcher in pinpointing the reasons for the growing concerns of counterfeiting in construction field. The individual participants were contacted via email and telephones and briefed about the questionnaire so that they could get an idea of what they were in participating in. A brief introductory discussion was also carried out with the participants, and their queries were appropriately answered, so that the

participants could achieve appropriate level of understanding about the nature of this questionnaire and research, so that they could easily fill the questionnaire accordingly.

All of the participants who were chosen representative based on their expertise in their fields answered the questions of questionnaire very clearly and the necessary documentation was recorded and stored to verify the validity and accuracy of the derived answers.

Physical Inspection

The author did physical inspection of the construction material includes electrical wires, sanitary pipe, switches and buttons. With the abundance of forged components in the construction materials supply chain over the last decade, it has become essential that manufacturers, contractors and consultants look over all the arriving materials for genuineness. The threat of using a tampered, substandard, or untrustworthy forged materials in such a systems may be disastrous (i.e., life-or-death). material tests are focused on capturing the defects associated to the external, internal and materials of a components package and to spot the physical comparison between the genuine and forged materials.

Data Analysis

These investigations were aided by the implementation of Statistic Package for Social Science SPSS in which the weight age assigned to each of the respondents were entered and accordingly these responses from total 96 questionnaires were subjected to analysis based on further statistics. The role of each of these factor in regards to counterfeiting was analyzed and Relative importance Index (RII) was employed for the status of these attributes in regards to critical aspects as concluded by these respondents which was computed by means of equation (1) and the results of these examination is presented in Table 1.

$$RII = W / A * N \quad (0 \leq RII \leq 1) \quad (1)$$

Where:

W = weight given to each factor by the respondents ranges from 1 to 5,

A = highest weight (i.e. 5 in this case)

N = total number of respondents that's is 96.

Formulation of RII

$$RII = \frac{w}{AxN}$$

$$RII = \frac{318}{5x96}$$

$$RII = 0.6625$$

RESEARCH FINDINGS AND RESULTS

The 5 most important factors of counterfeiting are discussed below. Table no 1 shows mean, standard Deviation ,RII and Ranking of all the questions. The top most important five factors which contribute most to counterfeiting are discussed below.

The Problem Of Counterfeiting Is Increasing Or Receding(RII=0.797917)

The other main feature according to Relative Importance Index and statistics indicates that the problem of counterfeiting is increasing immensely in our construction industry. The general population, the contractors/owners, and the suppliers believe that there is an increasing of counterfeiting problem.

Availability of counterfeit product in the market(RII=0.789583)

The second major factor according to Relative Importance Index and statistics point out that the availability of counterfeit products in the market penetrating and the people are unaware of the risk of the counterfeit product. production of counterfeit product is high and people are demanding for such products.

Risk of counterfeiting to the local construction industry(RII=0.71875)

The third most significant factor is the risk of counterfeit products is due to its low cost and people are unaware of its low quality and the QC/QA in our construction industry is not good enough to identify counterfeiting and deals with this threat.

Effect of counterfeit products on the construction industry (RII=0.716667)

The fourth most significant factor is the effect of counterfeit products on the construction industry is significantly high. The effect of counterfeiting is creating problem in the quality of the work. Due to counterfeit products the contractor/clients/organizations becomes a victim of bad publicity.

Probability of risk when i buy a counterfeit product(RII=0.714583)

The fifth important factor according to RII is risk of buying counterfeit products is high because the market is full of counterfeit product and people cannot make difference in buying goods/products from the market.

Table no 1. shows questions, mean, standard deviation and relative importance index

| Table No.1 Relative Importance Index Ranking, std.Deviation and Rank | | | | |
|--|--|----------|----------------|------|
| No | Important factors of counterfeiting in Peshawar KP. | RII | Std. Deviation | Rank |
| 1. | The problem of counterfeiting is increasing or receding | 0.797917 | 1 | 1 |
| 2. | Availability of counterfeit products in the market | 0.789583 | 2 | 2 |
| 3. | Risk of counterfeiting to the local construction industry | 0.71875 | 3 | 3 |
| 4. | Effect of counterfeit products of the construction industry | 0.716667 | 4 | 4 |
| 5. | Probability of risk when i buy a counterfeit product | 0.714583 | 5 | 5 |
| 6. | Rate of awareness of construction industry or client of counterfeiting | 0.708333 | 6 | 6 |
| 7. | Perception of the current risk of counterfeiting to the construction industry of Peshawar | 0.6625 | 7 | 7 |
| 8. | Health and safety consequences of counterfeiting | 0.641667 | 8 | 8 |
| 9. | Experience with counterfeit goods/products in the past | 0.625 | 9 | 9 |
| 10. | Quality control/assurance process of counterfeiting | 0.614583 | 10 | 10 |
| 11. | Government processes are capable of identifying of counterfeits | 0.6125 | 11 | 11 |
| 12. | Supply chain in term of the critical nature of the item or cost failure | 0.585417 | 12 | 12 |
| 13. | Impact of counterfeit products in terms of (safety,reputation,claims,economic)to the carrier and to the client | 0.579167 | 13 | 13 |
| 14. | Awareness and prevention of counterfeiting in regard to counterfeit items in the construction industry | 0.5 | 14 | 14 |
| 15. | Victim of bad publicity due to counterfeiting | 0.454167 | 15 | 15 |
| 16. | Quality of counterfeit material in the construction industry | 0.379167 | 16 | 16 |
| 17. | Counterfeit products are durable and reliable in the construction industry | 0.364583 | 17 | 17 |



Figure 1. showing switches and buttons both genuine and counterfeited. The counterfeit one is made of low quality plastic and slightly change is design.

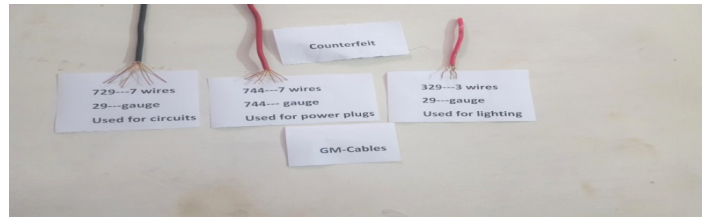


Figure 2. showing counterfeit GM cables and identified as counterfeit because the wires are of low gauge and name of GM cables is printed on it.

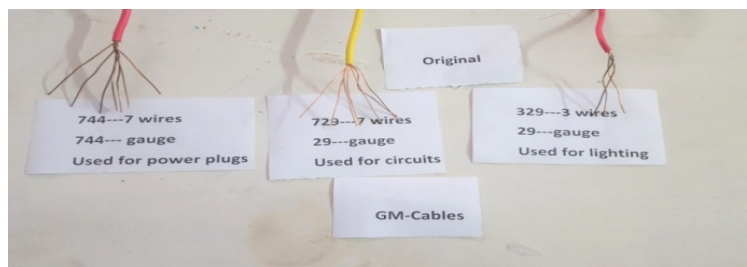


Figure 3 showing GM cables and it is identified as genuine because its wires are of full gauge.



Figure 4. showing both original and counterfeit KAWSAR company pipes. Counterfeit pipes are identified form the color which is slightly different then original one and its gauge is 3mm where as original pipe gauge is 4mm.

CONCLUSION AND RECOMMENDATIONS

The construction industry, one of the most important industries in modern society, recently has been affected by the misfortune of counterfeiting. Peshawar (KP) a suddenly developing city with an active counterfeiting background in different industries (clothing, intellectual property, electronics, etc.) has been identified as the main sources of counterfeited products in the construction industry.

Out of these 96 participants of different sectors of the Peshawar (KP) construction industry questionnaires were distributed, and their responses were analyzed through SPSS statistical software. The main factor according to Relative Importance Index and statistics indicates that the problem of counterfeiting is increasing immensely in our construction industry. The general population, the contractors/owners, and the suppliers believe that there is an increasing of counterfeiting problem. The availability of counterfeit products in the market penetrating and the people are unaware of the risk of the counterfeit product. production of counterfeit product is high and people are demanding for such products The third most significant factor is the risk of counterfeit products is due to its low cost and people are unaware of its low quality and the QC/QA in our construction industry is not good enough to identify counterfeiting and deals with this threat. The effect of counterfeiting is creating problem in the quality of the work due to counterfeit products the contractor/clients/organizations becomes a victim of bad publicity.

The risk of buying counterfeit products is high because the market is full of counterfeit product and people cannot make difference in buying the goods/products from the market.

RECOMMENDATIONS

- Check invoices to determine if material shipped is from unknown supplier or distributor.
- See if price is well below normal cost.
- Suspect any product whose name and address of manufacturer is not on the box.
- Watch out for poor-quality packaging.
- Be wary of labels or packaging with incorrect colors.
- Determine whether the country of origin is different from that of a known genuine part.
- Reject any product with incorrect shape or design.
- Be aware of level B products. It is important to always evaluate the possibility of a product or material to be counterfeit, even if it comes from a trusted vendor.
- To maintain an updated approved vendor list, verify as high in the supply chain as possible and uphold an origin of materials specification and list of excluded countries.

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