

Assessment of Compliance With NR 18: Development and Application of the Checklist due to the Supervision and Penalty of NR 28

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ABSTRACT : Regarding work safety, one of the worst rates has been in the construction industry, generating a high percentage of occupational accidents. As most companies have been trying to reduce costs, some necessary items are being left out, and end up generating some non-conformities. With all that has been happening, in view of this work, we aim to develop an applied methodology (checklist), presenting all the items listed in Regulatory Standard No. 18 (conditions and working environment in the construction industry) necessary for the safety of the construction industry. worker and the company, for possible inspection, presenting their due costs and penalties for non-conformities, according to Regulatory Norm No. 28 (inspection and penalties). This checklist was applied and a case study was carried out in three construction companies of different sizes, taking into account the number of employees for works, and the non-conformities presented on the jobsite according to the items listed in the spreadsheet according to NR 18, each missed item were applied according to NR 28 a respective penalty, and finally adding up all the penalties for non-conformities, it was demonstrated the amounts in reais that the companies could be penalized if there was a possible inspection on the work on that particular day. Once accomplished, we can conclude a vast difference between the values of the penalties in the companies and that regardless of the size they must propose in their budgets the expenses with collective protections.

Keywords - Accidents at Work, Civil Construction, Inspection, Work Safety.

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I. INTRODUCTION

The expansion of Brazilian civil construction has often shown the desperation of professionals working in the field of work safety, in view of the increase in the number of accidents, fines, expenses with accident benefits and special pensions. (PEINADO and MORI, 2016)

According to the Ministry of Labor, companies must, necessarily, follow NR 4 Specialized Services in Safety Engineering and Occupational Medicine Appendix I and Appendix II, with the purpose of promoting health and protecting the integrity of the worker in the workplace, being that the dimensioning of the service is linked to the risk gradation of the main activity of the company and to the total number of employees of the establishment.

According to the magazine *Téchne* 2009, companies that do not comply with safety standards and generate accidents suffer the consequences. The same goes for those who keep their workers informal.

Work safety in the construction industry has a high percentage of accidents, having one of the worst rates in relation to other sectors, along with this the excessive attempt to reduce costs in projects and execution by companies, contributing with some compliance of the rules are left out, for generating an expense that is not foreseen in the budget for the execution of the work. However, the fundamental objective is to prevent risks that will help to reduce the chance of accidents, as well as to reduce their consequences when produce.

The main objective of the work was to elaborate an applied methodology (checklist), to demonstrate the items evaluated in a possible inspection of the Ministry of Labor in the civil construction and its due costs with penalties following the NR 18 and NR 28, being able to be used for calculating the costs of non-conformities.

II. WORKPLACE SAFETY

In Brazil, millions of workers suffer accidents or become ill every year as a result of their work. Only the cases investigated by the National Institute of Social Security (INSS) have totaled more than 700 thousand misfortunes each year.

However, this indicator is very far from the actual number of victims. (FILGUEIRAS, 2015)

We know that the measures for the control and prevention of accidents influence the organization of the work process, which ends up generating changes in the attitudes of all those who participate in it, in addition to raising the cost not foreseen in the initial budget of the work.

The construction sector shows a wide range of specificities that determine the need for an intervention with different outlines from the generality of the sectors of activity, although subordinated, at the base, to the general principles of prevention. (FREITAS, 2011).

In the activity of the construction industry, there are numerous situations of high risk, inherent to the activity itself. The lack of protection is the main cause of fatal accidents, victimizing hundreds of workers each year, as statistics in Brazil indicate. (FUNDACENTRO, 2004).

The rationalization of tasks does not only respond to the fulfillment of construction schedules, but aims to meet one of the main attributes of quality such as the safety of the work and of those who work on it.

The data from health and safety work inspections carried out by the tax audit in 2016, among the 10 most inspected sectors, construction was the one with the highest percentage of inspections (28,28%), as well as infraction notices (36,01%) and interdiction or embargoes (54,57%) throughout the year.

In Brazil, the Regulatory Norms were approved 28 (twenty-eight) by Ordinance No. 3,214 on June 8, 1978, but today we have 36 (thirty-six) approved. Also known as NRs, they regulate and provide guidance on mandatory procedures related to worker health and safety.

The regulatory standards related to occupational safety and medicine, according to the Ministry of Labor, are mandatory for private and public companies governed by the CLT (Consolidations of Labor Laws). The requirements contained, apply as far as it falls to self-employed workers and companies and failure to comply with legal and regulatory requirements on occupational safety and medicine had caused employers a penalty under the law.

III. METHODOLOGICAL PROCEDURES

The applied methodology aimed to investigate, pointing out and analyzing the needs, thus being able to find solutions to the practical problems of daily life, or to provide options for changes and improvements through these analyzes.

To achieve the objectives proposed in this work, a spreadsheet was prepared according to the needs of Conditions and Environment of Work in Civil Construction according to NR 18.

After preparing this spreadsheet, it was properly applied to three works by different construction companies, such as Construtora A - Located in the city of Içara - Santa Catarina, considered small; Construtora B - Located in the city of Içara - Santa Catarina, considered medium-sized, and Construtora C - Located in the city of Criciúma - Santa Catarina, considered to be large.

The criteria used for the application of this checklist was "YES" for compliant items, "NO" for non-compliant items and "DOES NOT APPLY" for non-applicable items.

After the execution of the checklist of the three construction companies, the non-conformities present in the works were identified, according to the appropriate Inspections and Penalties, of NR 28, where we apply the penalties, each item of the standard presented the type of problem such as safety or occupational medicine and the degrees of infringement listed as I1, I2, I3 and I4.

After the application of the minimum and maximum gradation, the value of UFIR was obtained, which has been fixed since 2000, at R\$ 1.0641, multiplying the two values thus generating the amount of the fine in reais for each unattended item.

Após a aplicação das penalidades aos itens não atendido, foi feito a soma total de cada construtora, obtendo assim o valor das multas caso existisse uma possível fiscalização naquele período na obra.

IV. RESULTS

After elaborating the checklist and applying it to three construction companies of different sizes, the number of employees that existed in each work was first analyzed.

Each construction company was classified according to the number of employees, Construtora A has 1-10 employees, Construtora B 26-50 employees and Construtora C 51-100 employees, and each category has a different grade of fines, which it ends up implying that the greater the number of employees the greater the value of the infraction.

After verifying the number of employees, it was applied to the three construction companies, and it possessed approximately 840 items needed to be compliant with the works according to NR 18, these being safety and occupational medicine. In Figure 8, we can see, Constructors A, B and C, where 126, 62, 25 items were identified that do not comply with the obligations of the standard.

After the analysis of the information and values raised, it was analyzed that the construction company C, which had more employees and also belongs to a larger group, was the one that obtained less unanswered items, whereas Construction company A, considered small and that had a much smaller number of employees obtained practically five times the number of non-conformities required by the standard compared to Construtora C.

With all the non-conformities presented, it was possible to calculate the minimum and maximum penalty values for the items not met by the construction companies in the analyzed construction sites.

The values generated by minimum and maximum fines for each construction company for the total of non-conformities that occurred at the construction sites, that is, the 126 items not served by small construction company A and few employees, obtained a minimum value of R\$ 202.651,50 and one maximum amount of R\$ 249.419,70. The 62 items not served by Construtora B reached the values of R\$ 115.177,10 and R\$ 132.981,60, such as minimum and maximum, respectively. Construtora C, on the other hand, considered to be larger, and which had more employees, had the value of its minimum penalty R\$ 89.624,89 and maximum R\$ 102.102,50.

All these minimum and maximum values generated would be the possible values that the construction companies could have to pay in fines if there was a possible inspection at the construction site.

V. CONCLUSION

The methodology applied in the present research showed a vast difference between the number of non-conformities and the values obtained from fines between small, medium and large construction companies, which can often occur due to the excessive search for cost reduction in construction sites.

The difference in investments in medicine and occupational safety in the evaluated companies was evident, most of the times because it is a smaller construction company, the company may have stopped investing in this area, even due to the lack of supervision, as it is not so well known in the labor market. .

We can conclude that companies need to stay away from accidents and incidents and with their employees away from the problems caused by the inexistence or bad application of collective protections, that is, the importance of medicine and work safety is indispensable.

In view of the results obtained in the work, we show that regardless of the size to which the company is classified, it must propose in its budget the expenses with collective protections, which will evidently be less than the fines to be applied by the auditors of the Ministry of Labor.

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