U.T.C.B.
SCOALA DOCTORALA

RAPORT DE CERCETARE NR.1

MANAGEMENT OF THE QUALITY OF NON-DISTRUCTIVE TESTING WORKS IN THE SITE FOR REINFORCED CONCRETE AND MASONERY ELEMENTS

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1.INTRODUCTION

Nondestructive tests are part of the modern world of building inspections. So we have different methods:

2D SCANNING -EDDY CURRENTS

FIG.1 2 SCANNING ELECTROMAGNETIC METOD --- STEEL : 4 BARS 16-18MM + ETR.8MM / 15 CM

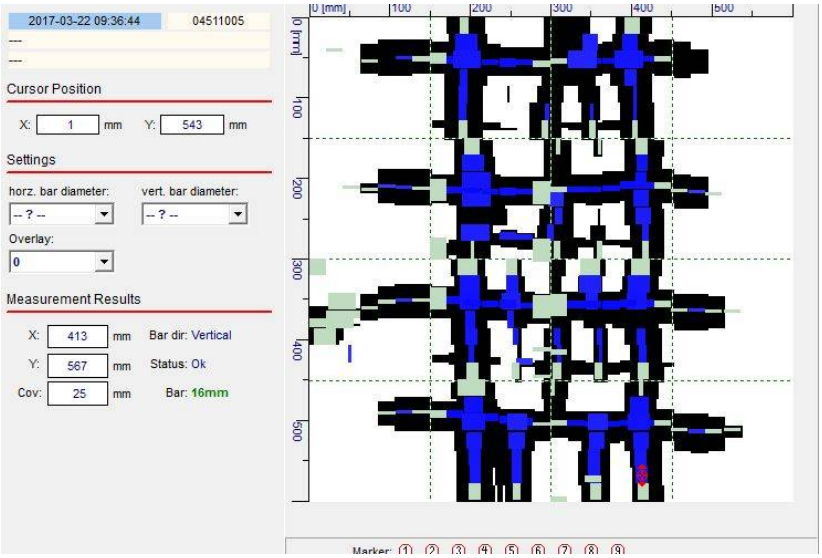

FIG.2 SCAN 2 D : ELECTROMAGNETIC METOD --- STEEL : 4 BARS 16-18MM + ETR.8MM / 15 CM -DIAGRAM

2)SCHMIDT HAMMER METOD :

FIG.3 SCHMIDT HAMMER TESTING ON BEAM -MEDIUM TIPE CONCRETE

3)ULTRASONIC TESTING OF CONCRETE

FIG.4 ULTRASONIC TESTING OF CONCRETE BEAM -SEARCH FOR DEFECTS

4) GPR-TESTING OF CONCRETE FUNDATION

FIG 5 .GPR TESTING WITH 2600 MHZ ANTENNA -FUNDATION REINFORCEMENT STUDT

5)MASONERY TESTING

FIG 6 .SHOVE TEST -SHEAR MORTAR VALUE STUDY -

6)MASONERY HAMMER TESTING OF STRENGHT -SPECIAL DESIGN OF SCMIDT HAMMER

FIG 7.MASONERY HAMMER TESTING OF STRENGHT -SPECIAL DESIGN OF SCMIDT HAMMER

7)STEEL TESTIN -LEEB TEST FOR STEEL CLASS

FIG 8.STEEL TESTING WITH DUROMETER-LEEB TIPE TEST

2.WORK ORGANIZATION

- **. CLASSIFICATION TYPES OF WORK AND ORGANIZATION WORKING STAGES**
- **DESCRIPTION OF PRODUCTION ACTIVITY**
- **. Definitions and abbreviations**
- **Definitions**
- **Apply the definitions in:**
- **SR EN ISO 9000: 2001 "Quality management systems. Fundamental and vocabulary principles. "**
- **abreviations**
- **Ad. - Administrator**
- **RP-Present product**
- **Reference documents**
- **SR EN ISO 9001: 2008;**
- **SR EN ISO 14001: 2005;**
- **STAS 18001: 2008;**
- **SR EN ISO CEI 17025: 2005.**
- **Procedure**
- **Production planning**
- **Depending on the contracts in progress and the deadlines for these contracts, the Administrator establishes the production planning for the provision of services at the highest possible level. Thus, production planning will take into account the following criteria:**
- **The contractual terms and the requests coming from the clients when the contract does not specify an execution schedule of the works;**
- **Identification of resources (trained and qualified personnel, equipment, logistics, etc.) necessary for the optimal development of the production process**

• Allocation of resources on different production processes;

ACHIEVING THE PRODUCTION PROCESS:

After production planning, the lab head informs the personnel involved in each production process about the particularities of the execution, respectively with the implicit and explicit requirements of the customer;

Disarming the equipment at the respective location at the Administrator's command and through the Administrative Manager;

Personnel dislocation and provision of accommodation conditions Preparation of the on-site production process by the Operators in close collaboration with the Client, according to the contractual requirements;

Achieving the production process in line with the Technical Working Procedures;

Transmitting the data to the Laboratory Leader;

Relocation of equipment and personnel (if applicable).

DATA ANALYSIS AND REPORTING

On the basis of data submitted by the operators, the laboratory chief analyzes the results obtained;

If necessary, for judicious evaluation of the results, request additional information from the respective Customer from the operators;

Also, to ensure the quality of the test results, the laboratory chief may request the repetition of the tests or the application of another test method; Depending on the volume of information on a site, correlations with other objects can also be made;

Drawing up the test report according to the referentials and sending it to the client;

Drawing up the job and related bills by the Administrator.

Responsibilities for each activity, the responsibilities, criteria and records are presented in annexes.

3.WORKING PROCEDURES

FIELD

System Procedure of LABORATORY. "Non-compliant Product Control" defines the activities of identifying and controlling the allegedly non-compliant product / service to prevent its unintended use or exercise.

The procedure applies to identify non-compliant services / products delivered by the organization that are not in compliance with the established contractual clauses, remedying the inconsistencies that occurred in the process of rendering services to clients, and reporting the functions and units involved.

The procedure is intended to regulate how the service performed that does not comply with customer requirements is identified and clarified

The control activities aim at identifying the non-compliant rendered / supplied services, solving their situation, correcting the inconsistencies, as well as informing the involved functions, for:

- to inform the product suppliers about the nature of the non-compliance identified in order to adopt the measures for their resolution;

-to assess the nature of the nonconformity and to analyze the risk of non-compliance with the client's requirements;

-consider the variants, decide which provision regarding the nonconformity process should be adopted and recorded;

DEFINITIONS AND PRESCRIPTIONS

Definitions:

The terms and definitions in SR EN ISO 9000: 2006 apply. SR EN ISO 14001: 2005

-SR EN ISO 18001: 2008

-abbreviations

. SMI - Integrated Management System

. RNACP - Non-compliance report and corrective / preventive actions..

***SL-Chief Laboratory**

. REFERENCE DOCUMENTS

- **SR EN ISO 9001: 2008;**
- **SR EN ISO 14001: 2005;**
- **OHSAS 18001: 2008;**
- **SR EN ISO CEI 17025: 2005.**

RESPONSIBILITIES

Administrator

Analyzes and approves the non-compliance and corrective / preventive actions report;

Assigns responsibilities and authorities to the persons and functions involved in the process of identifying and identifying non-conformities;

Approve proposals and measures to address nonconformities;

Head of Laboratory Participates in Analysis of Non-Compliance Report and Corrective / Preventive Actions.

Monitor records of non-conformance reports;

Ensure communication with suppliers and customers to address any nonconformities that occur;

Collaborates with other departments of the organization to identify and address issues related to product / process noncompliance;

RMI

Ensures the recording and preservation of the Originals of Non-Compliance Reports and corrective / preventive actions.

Ensures Compliance of Non-Compliance Reports and Corrective / Preventive Actions.

PROCEDURE

Non-compliant products identified at reception

When delivering products from the vendor, quantitative and qualitative reception of the products is made to see if they meet or not the requirements specified in the contract / orders;

The non-compliant products identified in the reception phase are separate from those conformed and stored inside the Reception area, in the specially designed space and are labeled accordingly "NECONFORM PRODUCT"

Non-conforming products are recorded in the entry receipt, which is sent to SL

Non-compliant work identified by the Laboratory Leader in the process of measurement, monitoring during the execution of the work

Non-conformities identified in works during execution (non-fulfillment of a condition of acceptability in the inspection process according to the execution project, exceeding

the term of validity of the products incorporated in the work, deterioration of the products.

Expiry of metrological checks of laboratory equipment, product contamination) are recorded by the SL in the Register of Non-Formats

Non-compliance reports prepared by the SL describe in detail the product, the material or the test, in order to evaluate and dispose of it.

The staff implanted in the execution process of the works that identified the material or non-compliant works inform SL to arrange the necessary measures

The solution of the non-conformity of the product or work is established in collaboration with the Administrator, who will report to the client according to the contractual procedure, how to repair or re-test if necessary.

SL may request that the execution of a work be stopped if it finds that the conditions for its execution are not met, in accordance with the contractual provisions or the provisions of the execution documents.

In the event of an environmental incident, the following procedure applies: "Emergency preparedness and response capacity"

. RECORDS

. Registration and storage of documents resulting from non-compliant product / process control activities shall be performed in accordance with the provisions of this Procedure, PS-02 "Record Control" procedures and contractual conditions as appropriate.

4.MANAGEMENT OF APPLICATIONS

PURPOSE AND FIELD :

The procedure aims to establish modalities for the regular and consistent assessment of compliance with applicable legal requirements and other quality, environment, and OH & S identified and identified risks to which the organization subscribes.

DEFINITIONS AND PRESCRIPTIONS

Definitions

The terms used in the procedure are defined SR EN ISO: 2006, SR EN ISO 14001: 2005 OHSAS 18001: 2008:

Danger-source, situation or action, with potential to cause injury, in terms of injury or illness, or a combination thereof

Incident-Job-related incident in which a wound or illness or fatality that has happened or could occur.

NOTE: An accident is an incident with a potential risk of injury, illness or fatality.

An emergency situation is a particular type of incident.

Interested party - person or group at or outside the workplace, preoccupied or affected by OH & S performance of the organization.

Non-compliance - non-fulfillment of a requirement.

Notes: Any deviation from: procedures, practices, standards, legal requirements, relevant, OH & S requirements.

OH & S -conditions and factors affecting or likely to affect the health and safety of employees or other workers (including time workers and contractor staff), visitors or other people at work.

OH & S management system of an organization management system used to develop and implement its OH & S policy and OH & S risk management.

Performance - Measurable results of organization management related to OH & S risks.

Risk - the likelihood of occurrence of a dangerous event or exposure and the severity of the injury or illness that may be caused by an event or exposure.

Risk assessment - a risk assessment process that results from a hazard taking into account the adequacy of any existing controls and the decision whether or not the risk is acceptable.

Workplace - any physical location where work related activities are under the control of the organization.

Disease - The physical or mental condition resulting from the wrong performance of some activities or a work-related situation.

Risk-free risk, which has been reduced to a level that can be borne by the organization in view of its legal obligations and its own OH & S policy.

OH & S policy - the intentions and general directions of an OH & S performance organization as officially stated by top management.

ABBREVIATIONS :

PS - System Procedure.

SMI - Integrated Management System;

RMI - Integrated Management Representative

OH & S- Occupational Health & Safety - Occupational Health and Safety;

REFERENCE DOCUMENTS :

- **SR EN ISO 9001: 2008;**
- **SR EN ISO 14001: 2005;**
- **OHSAS 18001: 2008;**
- **SR EN ISO CEI 17025: 2005.**

DESCRIPTION OF ACTIVITIES :

The assessment of compliance with the legal provisions, regulations and other requirements to which the organization subscribes is carried out:

- **on the occasion of the planned audits;**

• on unplanned audits

• by checking during the SMI processes.

In all situations, the following aspects are assessed:

• Existence and maintenance of all authorizations and approvals necessary for the operation of the organization;

This is done both on planned and unplanned audits as well as on current checks during SMI processes.

• The existence and availability of legal and regulatory provisions and all the requirements that the organization subscribes to;

It is intended by the RMI or by the auditing team that the "List of external documents in force" be disseminated and available in all compartments and the legal and regulatory provisions with incidence in that compartment are also available.

• Existence, appropriation and application of measures to eliminate the risk of injury and professional illness of employees and other persons participating in the work processes;

• Existence of own rules for the application of the work safety norms according to the conditions in which work is carried out at the workplace;

• Permanent existence and operation of protection systems and devices;

• Existence of evidence of jobs with special conditions: harmful, heavy, dangerous as well as evidence of work accidents, of occupational diseases;

• Existence of a record of the locations where there may be emergencies, incidents or environmental accidents, as well as evidence of the latter;

• Knowledge and observance of the rules of labor safety, of the established technical, sanitary and organizational measures;

• Stage of calibration and metrological verification of EMMs, in accordance with the legal regulations in force;

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