Whiplash preventing system

Fact Sheet

Project Information

Grant agreement ID: BRST960244

Project closed

Start date
23 July 1996

End date
31 May 1997

Funded under
Specific research and technological development programme in the field of industrial and materials technologies, 1994-1998

Total cost
No data

EU contribution
No data

Coordinated by
Eerste Bredasche Dekkleedenfabriek C.Witte BV
Netherlands

Objective

The European construction industry is confronted with a major problem concerning the safety of large and massive concrete structures: the unexpected deterioration, due to corrosion, of the steel stressing-tendons used in concrete structures (pre-stressed concrete structures), causing these structures to break or reducing their load carrying capacity. Present non-destructive analysis methods (NDA-methods) to measure defects, damage and degradation (anomaly) of pre-stressed concrete structures due to corrosion have been researched without much success. However

with knowledge gained in a successful feasibility project executed by NEBEST B.V. in the Netherlands, a new NDA method to locate and measure corrosion of pre-stressed concrete structures has betn tested: Reflectometric Impulse Measurement Technique (RIMT). The principle of RIMT is as follows. Series of high frequency-low voltage electrical pulses are sent through a steel-stressing tendon in pre-stressed concrete structures at one end of the tendon (anchor). The reflection signals are stored and analysed in a recently developed, complex mathematical model. The impedance variations of the standard characteristics are used to calculate the location of the anomaly. Physical and di-electrical anatomies cause different types of impedance variations, which can be recognised in the reflection signals. Therefore it is also possible to reveal the type of anomaly. The objective of this research project is to execute RTD into new electrotechnical measurement equipment (RIMT-Svstem) for the application of the RIMT technology as a NDA-method to locate and measure corrosion of pre-stressed concrete structures. The new RIMT-System will consist of sensors, hardware and software. With the RIMT-System it will be possible to determine defects, damage and degradation of existing pre-stressed concrete structures in a non-destructive way.

Fields of science (EuroSciVoc)

natural sciences > computer and information sciences > **software**

medical and health sciences > basic medicine > **anatomy and morphology**

engineering and technology > electrical engineering, electronic engineering, information engineering > electronic engineering > **sensors**

natural sciences > mathematics > applied mathematics > **mathematical model**

Programme(s)

FP4-BRITE/EURAM 3 - Specific research and technological development programme in the field of industrial and materials technologies, 1994-1998

Topic(s)

030205 - Technologies for vehicle safety

Call for proposal

Data not available

Funding Scheme

EAW - Exploratory awards

Coordinator

Eerste Bredasche Dekkleedenfabriek C.Witte BV

EU contribution

No data

Total cost

No data

Address

22,Nieuwe Bredaschebaan
4825 BP Brerda
Netherlands

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