




COURSE
Testing techniques for structures inspection 29th and 30th May 2012

Visual Inspection

Organization and requirements









COURSE
Testing techniques for structures inspection 29th and 30th May 2012

Visual Inspection

OVERVIEW





COURSE
Testing techniques for structures inspection 29th and 30th May 2012

Maintenance strategy

- Fundamental criteria:
 - Availability
 - Security
 - Durability
- EN 13306 Maintenance terminology







Investing in our common future


European Union
European Regional Development Fund



COURSE
Testing techniques for structures inspection 29th and 30th May 2012







Investing in our common future


European Union
European Regional Development Fund



COURSE
Testing techniques for structures inspection 29th and 30th May 2012








Investing in our common future





European Union
European Regional Development Fund




COURSE
Testing techniques for structures inspection 29th and 30th May 2012






Investing in our common future



European Union
European Regional Development Fund




COURSE
Testing techniques for structures inspection 29th and 30th May 2012

Inspection of railway bridges EU


Routine Inspection


- Visual observation of the principal components
 - Performed at ground level
- Cycle: 1year
- Goal: surveillance





Principal Inspection

- Visual observation of all components
 - Touching distance - special means of access
 - Special techniques
- NDT and DT
- Cycle: 5 years
- Goal: Structural assessment







Investing in our common future



European Union
European Regional Development Fund




COURSE
Testing techniques for structures inspection 29th and 30th May 2012






Investing in our common future


European Union
European Regional Development Fund



COURSE
Testing techniques for structures inspection 29th and 30th May 2012





Investing in our common future



European Union
European Regional Development Fund



COURSE
Testing techniques for structures inspection 29th and 30th May 2012






Investing in our common future







European Union
European Regional Development Fund

COURSE
Testing techniques for structures inspection 29th and 30th May 2012




Visual Inspection

REQUIREMENTS

Investing in our common future

COURSE
Testing techniques for structures inspection 29th and 30th May 2012

- The inspection team shall:
 - have a good vision acuity;
 - be familiar with the standards, rules and relevant specifications;
 - Have access to all necessary technical documentation to understand the expected structural behavior

Investing in our common future



COURSE
Testing techniques for structures inspection 29th and 30th May 2012






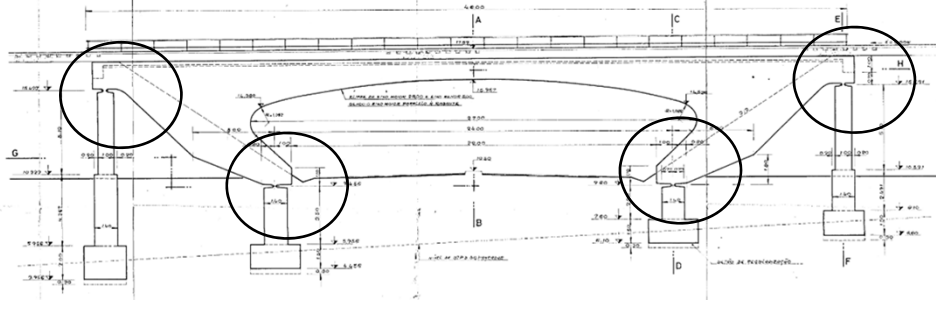
Investing in our common future





European Union
European Regional
Development Fund




COURSE
Testing techniques for structures inspection 29th and 30th May 2012

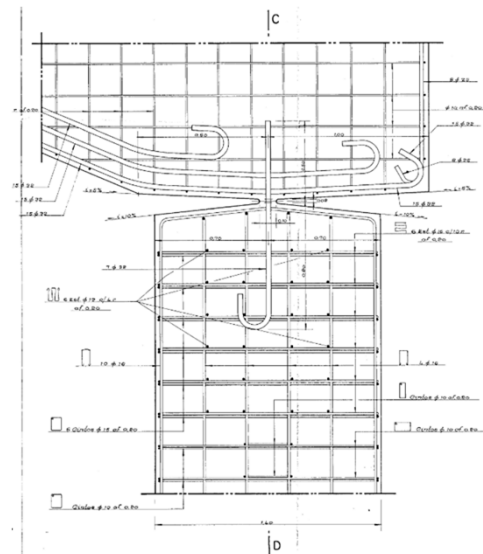




Investing in our common future



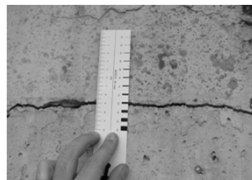
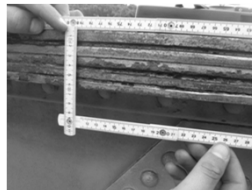
European Union
European Regional
Development Fund



Investing in our common future



A black and white photograph showing a person's hand in a white glove using a hammer to drive a nail into a light-colored, textured wall. The nail is partially inserted into a pre-drilled hole.



Investing in our common future




 REFER EPFL

European Union
European Regional
Development Fund



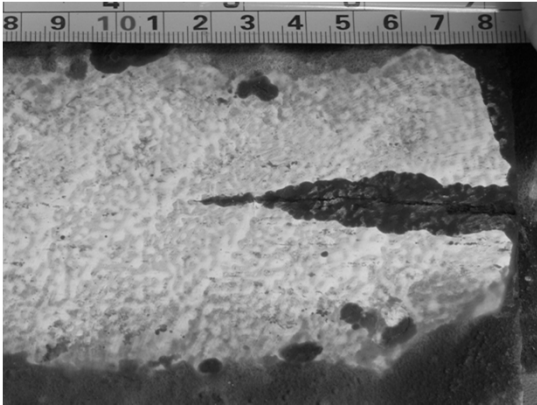
European Union
European Regional Development Fund





COURSE
Testing techniques for structures inspection 29th and 30th May 2012

Penetrant liquids


- to detect discontinuities at surface only of non-porous solid material
- Simple and cheap technique
- Requires surface preparation to allow the penetration of the liquid.








Investing in our common future








COURSE
Testing techniques for structures inspection 29th and 30th May 2012

Videoscopy


- May need pre-works like core drilling
- Visual examination thru small holes up to D5mm
- To evaluate:
 - the homogeneity of the materials;
 - the constitution of the elements observed








Investing in our common future




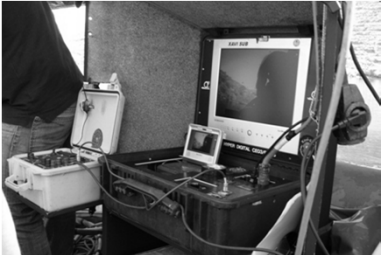



COURSE
Testing techniques for structures inspection 29th and 30th May 2012


Underwater diving


- Detailed view of the submerged element;
- Assessment of pier and abutment scouring;
- Limited field of view
- Requires qualified personnel to undertake the dive;
- Bi-directional communication equipment













Investing in our common future

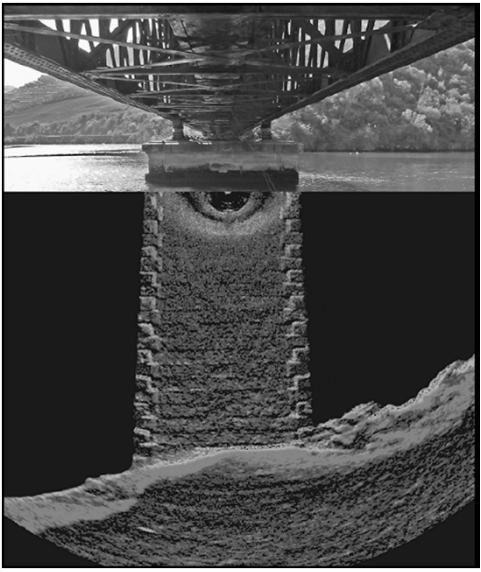

European Union
European Regional Development Fund





COURSE
Testing techniques for structures inspection 29th and 30th May 2012

Scanning Sonar


- To use in conjunction with underwater diving inspection
- Global view of the submerged elements
- Requires post-processing








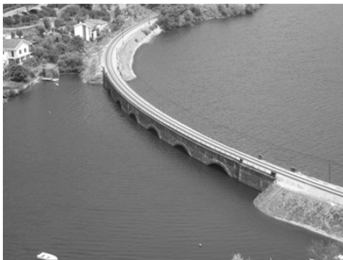




Investing in our common future


European Union
European Regional Development Fund





COURSE
Testing techniques for structures inspection 29th and 30th May 2012





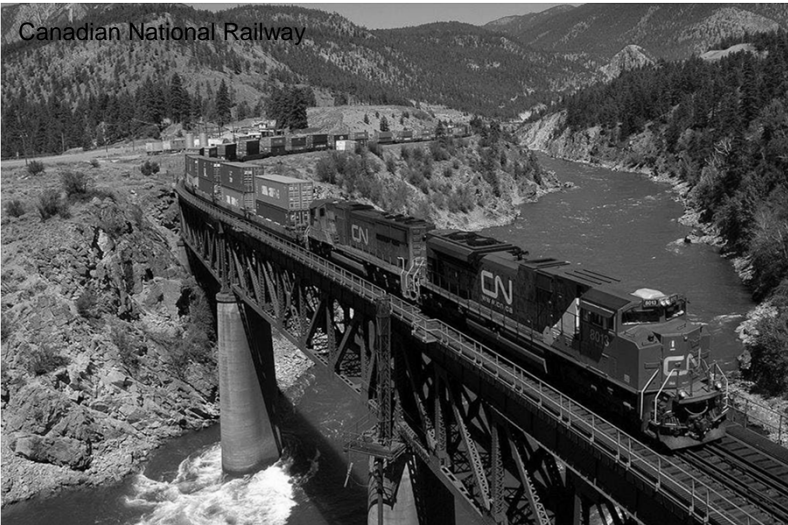
Investing in our common future







COURSE
Testing techniques for structures inspection 29th and 30th May 2012

Canadian National Railway





Investing in our common future

