



Update on RAILSAFE
AG 60 Meeting
Voestalpine, Leoben
14 November 2006



Development of a
Harmonised System for
Education, Qualification and Certification
of
Railway Track Welders

Background

- Industry requirement for uniform education, qualification and certification of railway track welders in Europe to improve mobility of welders
- New European Standards on rail welding EN 14730
- Public call for improved maintenance of railway tracks to improve safety and to reduce delays
- EC policy to improve 'interoperability' between national railway systems
- EC policy to stimulate life-long learning to improve employability
- EC policy: free movement of people in the EU

A European Commission project under the Leonardo da Vinci Community Vocational Training Action Programme



Duration three years, started
October 2004

Nine partners from seven
countries

European harmonisation

- Education, training and qualification makes exchange of welders possible, nationally and throughout Europe
- Certification assures continuing vocational competence for life-long development
- Qualification and certification in accordance with harmonised European guidelines provides a single, widely recognised, visible verification of a welder's competence

Observations

- RAILS SAFE is based on EWFs unique harmonised qualification system for welding personnel since 1990: over 100,000 diplomas issued
- RAILS SAFE will add detail to the CEN standards EN 14730: unified performance objectives for welders and a guideline on education, training, qualification and certification, to underpin the standards
- Non-mandatory system

Project outcomes

1. Understanding industry requirements
2. Guideline for the education, training, qualification and certification of railway track welders
3. Database of qualified and certified welders
4. Pilot courses with examination and qualification
5. Plan for an organisation to operate the system

1. Industry requirements

The first phase of the project “understanding industry requirements” has ended

50 experts from:

- railway authorities
- contractors
- process suppliers
- research and consultancy organisations
- training establishments and welding institutes

took part in five workshops in UK, DE, SE, SK, IT

1. Industry requirements

The experts discussed the requirements for:

- a plan for an organisation to operate the system
- performance objectives, which is the basis for the European Guideline for education, qualification and certification
- welding procedures
- a database of qualified and certified welders

Workshop report at www.ewf.be/railsafe

2. Guideline

- the industry requirements for the performance objectives, established during the workshops, lead to the Guideline:
 - ‘Minimum Requirements for the Education, Training, Examination, Qualification and Certification’ of a ‘European Aluminothermic Welder (EAW)’, for draft see: www.ewf.be/railsafe
- performance objectives:
 - are statements which identify the specific knowledge and skills the person should gain and display as a result of his/her education and training
 - are described in terms of ‘expected results’

2. Guideline

Module	Sub Module	Recommended teaching hours
1. Theoretical education	1. Materials and their behaviour during welding	8
	2. Welding Sequence and Equipment	23
	3. Fabrication, Applications Engineering	8
	Theoretical examination	1
	Total Module 1	40
2. Practical training	1. Aluminothermic welding	60
	2. Ancillary activities	16
	Practical examination	4
	Total Module 2	80
Total Course		120

2. Guideline

Performance objectives
in terms of expected results - example

Module 1 – Theoretical education	40
1.1 Materials and their behaviour during welding	8
<u>1.1.1 Basics of metallurgy</u>	4
<i>Expected results</i>	
1. Describe properties of steel	
2. Evaluate the effects of cooling rate	
3. Interpret mechanical properties	

2. Guideline

1.1. Materials and their behaviour during welding

1.1.1. Basics of metallurgy

Objective:

Understand the basics of metallurgy of steels, phenomena due to heating and cooling and mechanical properties with regard to the rail steel

Scope:

Alloying elements (influence of carbon and manganese in rail steel)

Composition of rail steel

Purpose and events at the heat treatment of the rails

Quenching phenomena and relevant factors

Destructive testing (tensile test, hardness test)

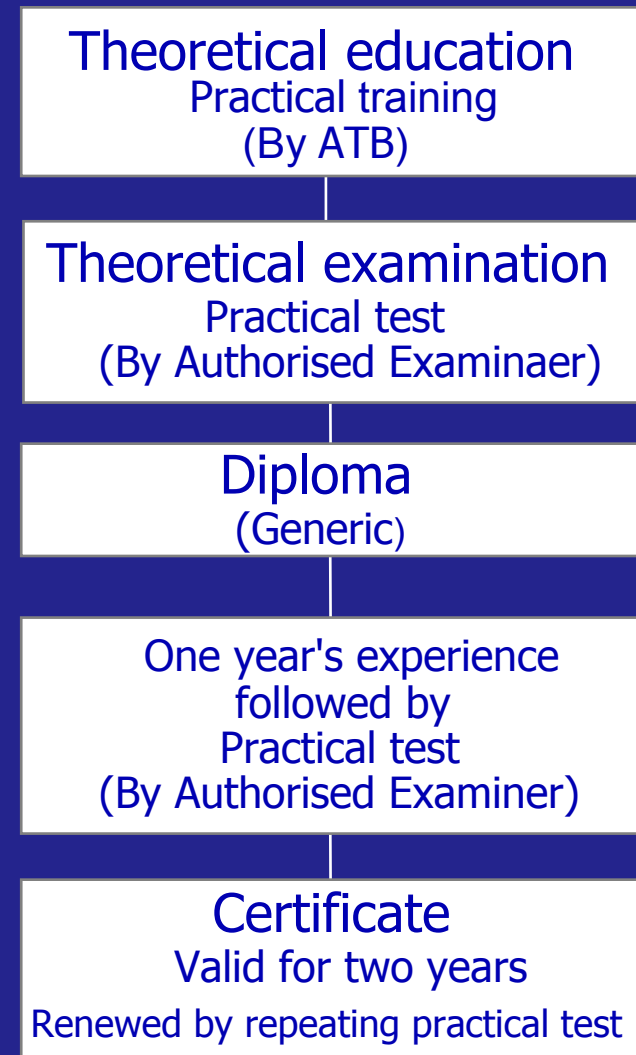
Concepts of brittle and ductile behaviour

Expected results:

1. Describe properties of steel
3. Evaluate the effects of heat treatment and cooling rate
4. Interpret mechanical properties

2. Guideline

Educational structure



3. Database of qualified and certified welders

- Web-based database
- Data supplied by ATBs and inserted by ANBs
- Data is based on one Diploma and one or more Certificates issued to the welder
- Consent of welder/employer required

4. Pilot courses with examination and qualification

- Education and training material (non-mandatory)
- Examination questions
- Pilot courses in UK, PT, NL, SE, DE
- Examination and qualification
- Pilot courses will be held in March 2007

5. Plan for an organisation

European Rail Welding Organisation
Assesses and authorises ANBs
(to be discussed)

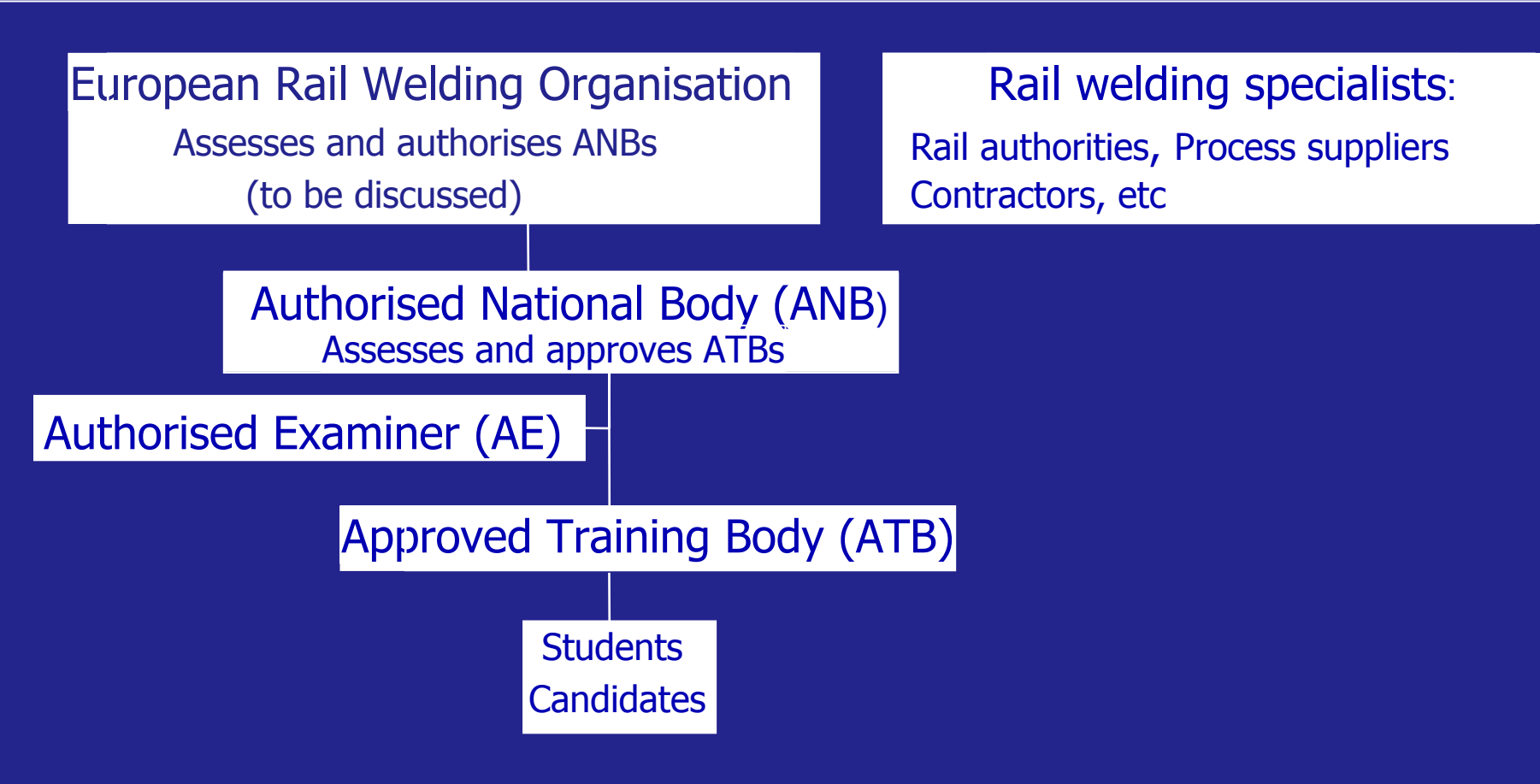
Rail welding specialists:
Rail authorities, Process suppliers
Contractors, etc

Authorised National Body (ANB)
Assesses and approves ATBs

Authorised Examiner (AE)

Approved Training Body (ATB)

Students
Candidates



Dissemination

- Workshops in Copenhagen, Abington, Genova, Hannover and Bratislava
- Meetings with IoRW (UK) and AG 60 (Sweden)
- Meetings with process suppliers: Elektrothermit, Railtech, Plötz, KLK
- Partners' meetings with railway authorities
- Meetings with CEN/TC 256/SC1 and WG4 Chairman
- Various presentations and articles in partner countries

Dissemination

- Workshop report on industry requirements and draft Guideline on RAILS SAFE Website:
www.ewf.be/railsafe
- Comments on draft Guideline are much appreciated
- RAILS SAFE system will be implemented by ProRail in the Netherlands

Dissemination

European wide seminar

to discuss the education, training,
examination, qualification and certification
system

on Wednesday 24 January 2007

at TWI, Abington, UK

Participants are railway welding experts from
railway authorities, contractors, process
suppliers, training schools and welding
institutes and welders