GENERAL INFORMATION ON EN 1999

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ENV-EUROCODE 9 (1998) "ALUMINIUM STRUCTURAL DESIGN"

Part 1.1 "General rules"

Part 1.2 "Fire design"

Part 1.3 "Structures susceptible to fatigue"

EN-EUROCODE 9 (2006)
"ALUMINIUM STRUCTURAL DESIGN"

1) EN 1999-1-1 GENERAL STRUCTURAL RULES

2) EN 1999-1-2 STRUCTURAL FIRE DESIGN

3) EN 1999-1-3 ADDITIONAL RULES FOR STRUCTURES SUSCEPTIBLE TO FATIGUE

4) EN 1999-1-4 SUPPLIMENTARY RULES FOR COLD-FORMED SHEETING

5) EN 1999-1-5 SUPPLIMENTARY RULES FOR SHELL STRUCTURES

EUROCODE 9 – Part 1-1: General structural rules

CONTENTS of Part 1-1

1) General

2) Basis design

3) Materials

4) Durability, corrosion and execution

5) Structural analysis

6) Ultimate limit states for members

7) Serviceability limit states

8) Ultimate limit states for connections

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ANNEXES to Part 1-1

A) Execution classes

B) Equivalent T-stub in tension

C) Materials selection

D) Corrosion and surface protection

E) Analytical models for stress-strain relationship

F) Behaviour of cross-sections beyond elastic limit

G) Rotation capacity

H) Plastic hinge method for continuous beams

I) Lateral torsional buckling of beams and torsional or torsional-flexural buckling of compressed members

J) Properties of cross-sections

K) Shear lag effects in member design

L) Classification of joints

M) Adhesive bonded connections

EUROCODE 9 – Part 1-2: Structural fire design

CONTENTS of Part 1-2

1) General

2) Basis design

3) Material properties

4) Structural fire design

5) Structural analysis

Annex A : Properties of aluminium alloys not listed in EN 1999-1-1

Annex B : Heat transfer to external structural aluminium members

EUROCODE 9 – Part 1-3 :
Additional rules for structures susceptible to fatigue

CONTENTS of Part 1-3

1) General

2) Basis design

3) Materials,constituent products and connecting devices

4) Durability

5) Structural analysis

6) Ultimate limit states of fatigue

7) Quality requirements

8) Ultimate limit states for connections

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ANNEXES to Part 1-3

A) Bases of design

B) Guidance on assessment by fracture mechanics

C) Testing for fatigue design

D) Stress analysis

E) Adhesive bonds

F) Low cycle fatigue range

G) Influence of R-ratio

H) Fatigue strength improvement of welds

I) Castings

J) Alternative tables for structural details

EUROCODE 9 – Part 1-4 : Supplementary rules for cold-formed sheeting

CONTENTS of Part 1-4

1) General

2) Basis design

3) Materials

4) Durability

5) Structural analysis

6) Ultimate limit states

7) Serviceability limit states

8) Connection with mechanical fasteners

9) Design assisted by testing

Annex A : Testing procedures

Annex B : Durability of fasteners

Annax C : Bibliography

EUROCODE 9 – Part 1-5 : Supplementary rules for shell structures

CONTENTS of Part 1-5

1) General

2) Basis design

3) Materials and geometry

4) Ultimate limit states

5) Modelling for analysis

6) Plastic limit state (LS 1)

7) Cyclic plasticity limit state (LS 2)

8) Bucking limit state (LS 3)

Annex A : Expressions for bucking design

EN 1090 : Execution of steel and aluminium structures

Part 3 : Technical rules for execution of aluminium structures

1. Scope
2. Normative references
3. Terms and definitions
4. Specifications and documentation
5. Constituent materials and products
6. Fabrication
7. Welding
8. Mechanical fastening and adhesive bonding
9. Erection
10. Protective treatment
11. Geometric tolerances
12. Inspection , testing and corrections

Annexes to EN 1090 – 3 ; Part 3 : Technical rules for execution of aluminium structures

A) Welding procedure test for fillet welds

B) Requirements on geometical tolerances which are not normally critical for the integrity of the structure

C) Project specification list

D) Final inspection of fabricated aluminium components

E) Procedure test for determination of slip factor

F) Proposed frame fpr quality plan

G) Requirements for execution classes

H) Fastening of cold formed members and sheeting

I) Guidance for the determination of execution classes and structural classes

INNOVATIVE ISSUES in EC 9 part 1.1

1. Classification of cross-sections
2. Extent of heat affected zones (HAZ)
3. Generalized formulation for ULS for axially loaded members
4. Generalized formulation for ULS for members in bending
5. Bucking curves approach for columns
6. Local bucking approach
7. Evaluation of rotation capacity
8. Plastic design approach
9. Classification of connections
10. T-stub model for end plate bolted connections

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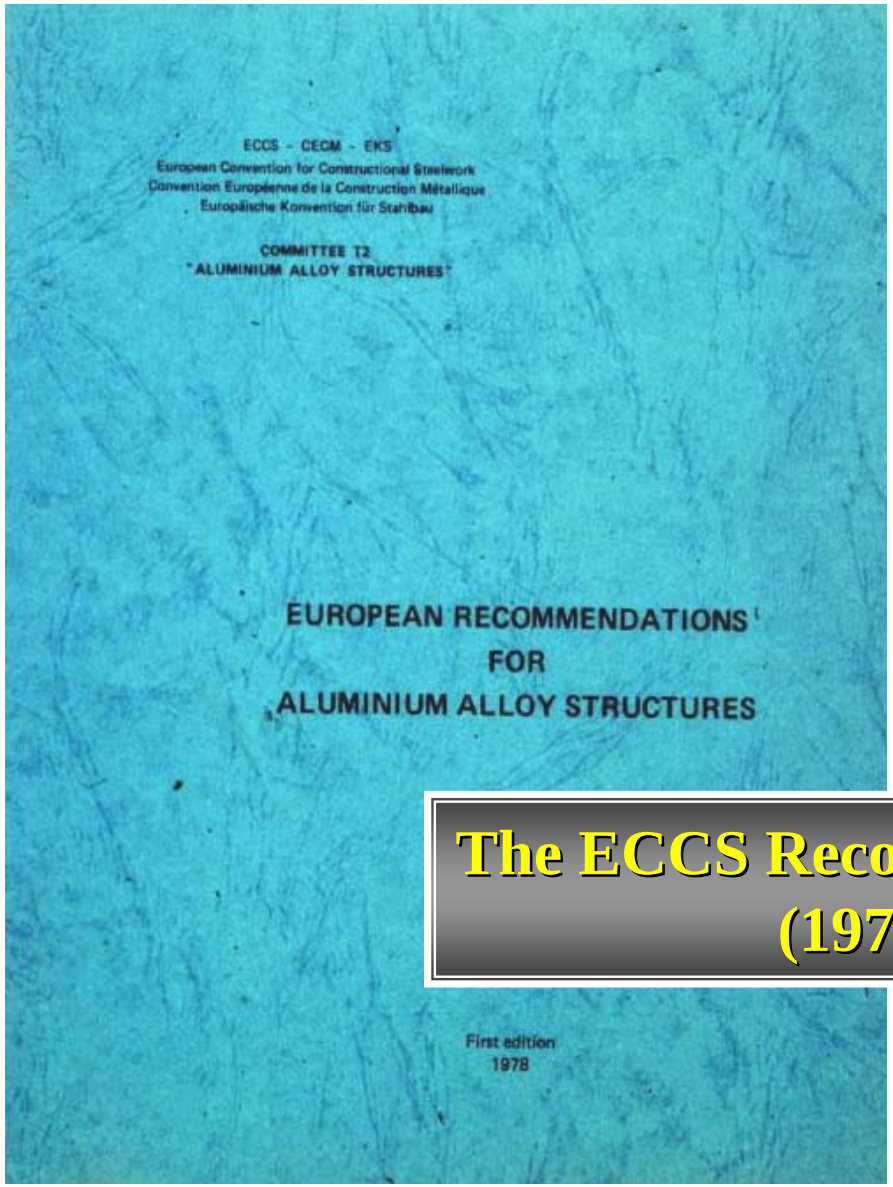
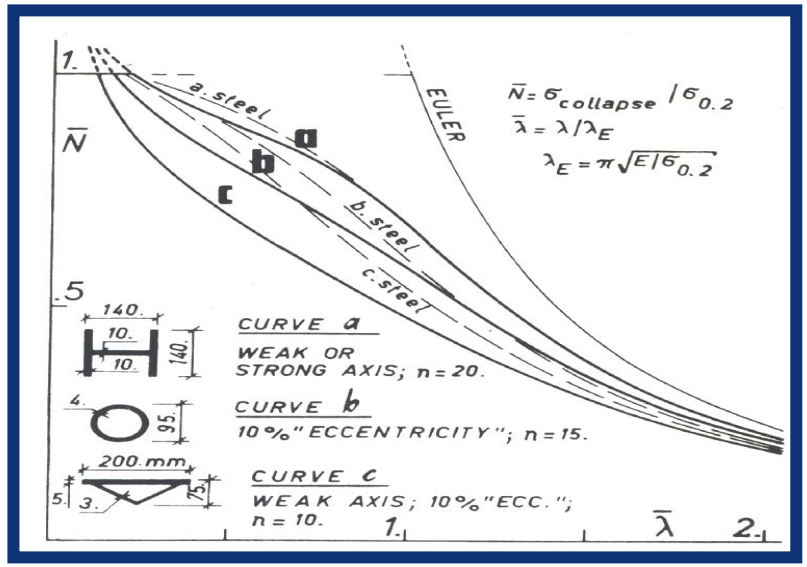
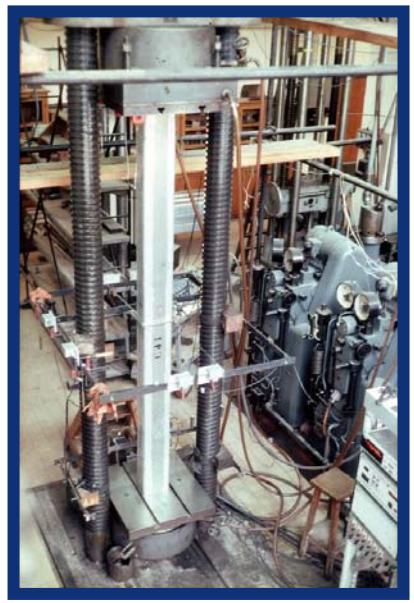




The ECCS Recommendations (1978)



Background of EC 9

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THE PERFECT EUROPEAN
SHOULD
BE ...
COOKING...
MENU
... LIKE A BRIT
DRIVING...
... LIKE THE FRENCH
AVAILABLE...
VACANCES
CONGE
TECHNICAL...
FLEXIBLE...
... AS A SWEDE
... AS A LUXEMBOURGER
... AS AN AUSTRIAN
... AS AN ITALIAN
SOBER...
... AS THE IRISH
HUMBLE...
... AS A SPANIARD
GENEROUS...
BLIND
GIVE!
... AS A DUTCHMAN
ORGANISED...
SALES
... AS A GREEK
DISCREET...
...AS A DANE
THANK YOU VERY MUCH