

EUROPEAN CONVENTION FOR CONSTRUCTIONAL STEELWORK
CONVENTION EUROPEENNE DE LA CONSTRUCTION METALLIQUE
EUROPÄISCHE KONVENTION FÜR STAHLBAU





ECCS
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Publications Catalogue

September 2003 – June 2004

32, av. des Ombrages, B-1200 Brussels, Belgium

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WHAT IS THE ECCS ?

ECCS OBJECTIVES

The European Convention for Constructional Steelwork (ECCS) has as main purpose the international promotion of the constructional steelwork industry as represented by the respective activities of the member companies of the National Associations. This promotion is achieved :

- **by supporting the promotional activities of the National Associations :**
 - exchange of experience in promotion work;
 - publication of promotional texts and marketing arguments to be used in the national promotion activities;
 - international symposia for engineers and architects;
 - public relations for constructional steelwork.
- **by co-ordinating technical development in the field of:**
 - practical recommendations for the design and execution of steel structures;
 - building codes (Eurocodes, etc.);
 - new applications for non-discrimination of constructional steel (fire and anti-corrosion protection, etc.).
- **by following the economic development of the constructional steelwork industry;**
- **by facilitating contacts between industrialists and opinion leaders of the industry.**

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THEMATIC LIST

<u>Fire</u>		
<u>ED.</u>	<u>CODE</u>	<u>TITLE</u>
1989	55	Calculation of the fire resistance of composite structures
1993	75	Fire safety in open car parks (E-F)
1994	80	International seminar on fire safe steel structures
1995	82	Fire design information sheets (E-F-NL)
1996	89	Euro-Nomogram
1996	92	Explanatory doc. to Euro-Nomogram
1985	Ext*	Fire Engineering Design for Steel Structures – State of the Art (IISI)
2001	111	Model Code on Fire Engineering

<u>SEISMIC</u>		
<u>ED.</u>	<u>CODE</u>	<u>TITLE</u>
1986	45	Recommended testing procedure
1988	54	E.R. for Steel Structures in Seismic Zones
1993	76	Design of Steel Structures in Seismic Zones

<u>BRIDGES</u>		
<u>ED.</u>	<u>CODE</u>	<u>TITLE</u>
1988	53	International Symposium on steel bridges
1992	70	Symposium international Ponts métalliques – Bridges in steel (Comments in English & French)
1995	81	The use of weathering steel
1996	86	Steel Bridges Span Europe
1996	97	3rd International Symposium on steel bridges-Rotterdam
1999	108	4 th International Symposium on Steel Bridges – Leipzig

2003	117	5 th international Symposium on Steel Bridges - Barcelona
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<u>Fatigue</u>		
<u>ED.</u>	<u>CODE</u>	<u>TITLE</u>
1985	43	Recommendations for the fatigue design of steel structures
1992	68	E.R. for aluminium alloy structures fatigue design
2000	105	Good design practice-a guideline for fatigue design

<u>Wind</u>		
<u>ED.</u>	<u>CODE</u>	<u>TITLE</u>
1987	52	Recommendations for calculating the effect on Wind on constructions

<u>CORROSION</u>		
<u>ED.</u>	<u>CODE</u>	<u>TITLE</u>
1985	48	Protection against Corrosion inside buildings (E-F-D)
1987	50	Protection of Steel Structures against Corrosion by coatings
1998	90	Surface Protection Guide for Steelwork in building Interiors & façades (E-F-D)
1998	98	Surface Protection Guide for Steelwork exposed to atmospheric environments (E-F-D)

<u>STABILITY</u>		
<u>ED.</u>	<u>CODE</u>	<u>TITLE</u>
1976	22	Manual on Stability of Steel Structures
1985	31	Structures Métalliques sans Raidisseurs
1984	33	Ultimate limit State Calculation



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1984	36	Testing Procedures for Stability
1988	56	E.R. for Buckling of Steel Shells
1990	60	Design of longitudinally Stiffened Webs

FRAMES

<u>ED.</u>	<u>CODE</u>	<u>TITLE</u>
1990	61	Practical Analysis of single-storey Frames
1991	65	Abridged version of EC 3 for the design of steel buildings
1992	67	Analysis and Design of Steel Frames
1993	71	Examples to Eurocode 3
1995	77	Connections and Frame Design for economy
1995	84	Multi-Storey buildings in steel - Car Parks (E-F-D)
1996	85	Design Handbook for braced or non sway steel buildings according to EC3 (E-F-D-ES-I-NL)

EUROCODES

<u>ED.</u>	<u>CODE</u>	<u>TITLE</u>
1991	65	Abridged version of EC3 for design of steel building
1993	71	Examples to EC3
1993	72	Composite Beams and Columns to EC4
1996	85	Design Handbook for Braced or Non-sway Steel Buildings according to EC3
1996	94	Background documentation to EC1
1998	93	Execution of steelwork to EC3 – ENV 1090: Part 1, Guidance on preparation
2000	96	Design handbook for braced composite steel-concrete buildings according to EC4 (E-F-D-ES-I-NL)
2001	113	Design tables and graphs for composite beams to EC4

FLOORS

<u>ED.</u>	<u>CODE</u>	<u>TITLE</u>
1984	34	Light weight Steel based Floors
1993	73	Good Construction Practice for Composite Slabs
1995	74	Multi-storey buildings in Steel – The Swedish development
1995	83	Multi-storey buildings in steel - Design Guide for Slim Floors with built-in beams
1995	87	Design Manual for Composite Slabs
1998	103	Guidelines for the application of prestressed hollow core slabs supported on built-in beams
1998	106	Longitudinal shear resistance of composite slabs: Evaluation of existing tests

JOINING

<u>ED.</u>	<u>CODE</u>	<u>TITLE</u>
1991	64	Acceptance inspection of Grade 10.9 structural fasteners
1994	79	E.R. for Bolted Connections with injection
1999	109	Design of composite joints for buildings

Composite

<u>ED.</u>	<u>CODE</u>	<u>TITLE</u>
1981	28	Model Code for Composite Structures
1993	72	Composite Beams and Columns to EC4
2000	96	Design handbook for braced composite steel-concrete buildings according to EC4 (E-F-D-ES-I-NL)
1998	103	Hollow Core Slabs
2001	107	Composite beams with partial concrete encasement



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<u>COLD SECTIONS</u>					
<u>ED.</u>	<u>CODE</u>	<u>TITLE</u>			
1978	20	E.R. for testing of Profiled Metal Sheets	1986	46	Lexicon
1983	21	E.R. for Design and Testing of Connections	1989	57	International symposium building in steel – The way ahead
1983	41	Good Practice in Steel Cladding and Roofing	1990	59	E.R. for sound insulation in multi-storey buildings
1983	42	Mechanical Fasteners for Steel Sheetings	1999	84	Multi-storey Buildings in steel – Car parks (E-F-D)
			1996-2000	91	Case studies: EFTA building, L'Oreal factory, TAZ building, RFB building, The Guggenheim Museum, Academy of Turku, Dogan Printing Ctr, Copenhagen airport, berlin reichstag, roissy airport, petrol stations, lucerne congress centre
<u>SHEETS</u>					
<u>ED.</u>	<u>CODE</u>	<u>TITLE</u>			
1990	62	E.R. for Sandwich Panels II			
2001	115	E.R. for Sandwich Panels I	1998	99	Merits of steel construction – Les mérites de la construction métallique – Bauen mit stahl Warum?
1995	88	E.R. for Application of metal Sheeting acting as Diaphragm	1997	100	Statistical bulletin
			1999	110	International conference on steel, "Steeling the competitive edge"
<u>GENERIC</u>					
1978	26	European recommendations for aluminium alloy structures			





ECCS Publications

Code	Title	€
20.	EUROPEAN RECOMMENDATIONS FOR THE TESTING OF PROFILED METAL SHEETS English, 1976, 40pp	8
21.	EUROPEAN RECOMMENDATIONS FOR THE DESIGN AND TESTING OF CONNECTIONS IN STEEL SHEETING AND SECTIONS English, 1983, 176pp	18
22.	MANUAL ON STABILITY OF STEEL STRUCTURES English, 1976, 333pp <i>Gives the theoretical and experimental basis for the relevant clauses of the European Recommendations for Steel Construction and of the Model Code for Composite Structures (see publications N°23, 28 and 29 of the present list).</i> <i>The twelve chapters provide design criteria, literature and state-of-the-art surveys of the relevant subjects.</i>	57
23.	EUROPEAN RECOMMENDATIONS FOR STEEL CONSTRUCTION English, 1977, 368pp <i>A photocopy can be obtained on demand.</i>	Out of print
26.	EUROPEAN RECOMMENDATIONS FOR ALUMINIUM ALLOY STRUCTURES English, 1978, 160pp <i>Gives guidelines to the engineer to design and calculate constructions in aluminium alloys. It deals with alloys which are commonly used in such structures. Chapter 1 gives the basis for design and details the ultimate limit state and the serviceability limit state. It covers the load factors and the combinations. Chapter 2 gives the qualities of aluminium alloys. Chapters 3 & 4 deal with the strength and the stability of structures and their components. Chapter 5 contains the recommendations for bolted connections. Friction grip type connections are added. Chapter 6 deals with welds, it classifies the reduced strength zone and effected zone. It gives a list of matching parents and filler materials.</i>	20



Code	Title	€
28.	<p>MODEL CODE FOR COMPOSITE STRUCTURES English, 1981, 185pp</p> <p><i>Deals with the design and construction of composite structures and has been worked out in view of being used as a reference for national and international codes for specifications. The basic aspects of the design of composite structures are treated in agreement with the latest knowledge resulting from research and constructional practice and in consistency with the recommendations of the participating international bodies for steel and concrete structures.</i></p>	20
29.	<p>(EUROPEAN RECOMMENDATIONS FOR STEEL CONSTRUCTION : BUCKLING OF SHELLS) No longer available - Updated under n° 56</p>	
31.	<p>STRUCTURES METALLIQUES SANS RAIDISSEURS ET POUTRES A ÂME PLEINE ET PAROIS MINCES Analyse et Dimensionnement, Recommandations européennes Français, 1985, 112pp</p> <p><i>Cet ouvrage rassemble les résultats de recherches théoriques et expérimentales concernant des structures à âme pleine non raidies ainsi que les bases de calcul et les directives de construction de celles-ci; Il constitue pour l'ingénieur un manuel de calcul et de construction utile et pratique. Les recommandations sont énoncées selon les principes des états limites et donnent des valeurs de résistance ultime.</i></p>	18
33.	<p>ULTIMATE LIMIT STATE CALCULATION OF SWAY FRAMES WITH RIGID JOINTS English, 1984, 26pp</p> <p><i>The paper mainly deals with possible models for the static analysis of frames and defines the range of application of these models. It shows the possibility of different simplifications in the ultimate limit state analysis of sway frames. The main application field is the analysis of frames with I profiles bent about the strong axis. Elastic and elastic-plastic analysis are examined.</i></p>	11
34.	<p>LIGHT WEIGHT STEEL BASED FLOOR SYSTEM FOR MULTI- STOREY BUILDINGS English, 1984, 50 pp</p>	16



Code	Title	€
	<p><i>The object of this paper is to present new trends in the development and application of steel based floor systems. Such light weight floors in combination with plate materials are alternatives to concrete floors. Load carrying capacity and stiffness of the floors can be increased by the composite action of steel sheet sections and plate materials.</i></p> <p>The German version is also available at the Deutscher Stahlbau Verband, Sohnstraße 65, 40237 Düsseldorf.</p>	
35.	<p>DESIGN MANUAL ON THE EUROPEAN RECOMMENDATIONS FOR THE FIRE SAFETY OF STEEL STRUCTURES English, 1985, 202 pp</p> <p>A photocopy can be obtained on demand</p>	Out of print
36.	<p>TESTING PROCEDURES</p> <p>English, 1984, 45 pp</p> <p><i>This publication provides guidelines for testing procedures that are in compliance with the design principles of the ECCS. It deals in particular with the properties that are investigated experimentally in the course or as goal of an ultimate strength determination rather than in the viewpoint of material testing. The description of testing procedure is restricted to strength parameters that influence the ultimate strength of the test specimen.</i></p>	8
41.	<p>RECOMMENDATIONS FOR STEEL CONSTRUCTION : GOOD PRACTICE IN STEEL CLADDING AND ROOFING English, 1983, 106 pp</p> <p><i>Gives valuable guidance and suggestions for the structural design of different types of roof-and wall-structures, on problems of building physics, and on erection and maintenance of such elements.</i></p> <p><i>(The German version also available at Deutscher Stahlbau Verband, Sohnstraße 65, 40237 Düsseldorf)</i></p>	11
43.	<p>RECOMMENDATIONS FOR THE FATIGUE DESIGN OF STEEL STRUCTURES English, 1985, 45 pp</p>	10



Code	Title	€
	<p><i>These recommendations are intended to be used for fatigue assessments of steel structures and for the development of national and other international design documents. Recommendations are included for : fatigue strength, classification of many structural shapes and details, fatigue loading, a limit state safety concept, quality assurance, in-service inspection and maintenance, fracture mechanics, hollow sections and the hot spot stress method.</i></p> <p>Also available in German:</p> <p>EMPHELUNGEN FUR DIE BEMESSUNG UND KONSTRUKTION VON ERMUDUNGSBEANSPRUCHTEN STAHLBAUTEN Deutsch, 1987, 48 pp</p> <p>A Japanese version is also available at the Japanese Society of Steel Construction, 848 Shin Tokyo Building, 3-3-1 Marunouchi Chiyoda-Ku, J – TOKYO 100</p>	11
45.	<p>RECOMMENDED TESTING PROCEDURE FOR ASSESSING THE BEHAVIOUR OF STRUCTURAL STEEL ELEMENTS UNDER CYCLIC LOADS English, 1986, 11 pp</p> <p><i>The behaviour of steel structural elements under cyclic loads is important to know in the context of earthquake resistant design, because real behaviour may differ by far from the ideal reference of the perfect elasto-plastic element.</i></p> <p><i>Testing may be necessary to prove the adequacy of the element (substructure, connection, detail) to the demand of seismic recommendations. The testing procedure is a reference way to carry out and interpret tests, intending to cover the lack of such reference in European countries and most other countries.</i></p>	5
46.	<p>LEXICON, MULTI-LINGUAL DICTIONARY OF TECHNICAL TERMS FOR STEEL CONSTRUCTION English-Dutch-German-Spanish-Italian-French, 1985</p> <p><i>This dictionary contains 2.655 technical terms in 6 languages.</i></p>	27
46 CD-ROM	<p>ECCS-ESDEP Society LEXICON, Multi-lingual dictionary of technical terms for steel construction English, German, French, Dutch, Spanish, Italian, Portuguese, Finnish, Swedish This CD contains 4000 terms, merging between the 2655 ECCS lexicon terms and the terminology used in the educational ESDEP programme</p>	60



Code	Title	€
48.	PROTECTION AGAINST CORROSION INSIDE BUILDINGS English, 1985, 54 pp <i>These recommendations cover load bearing steel structures inside multi-storey buildings, which are designed for being temporarily used or permanently occupied by people and are therefore provided with adequate climatic protection. Steel structures exposed to the weather do not fall within the scope of these recommendations.</i> Also available in French, German:	13
	LA PROTECTION CONTRE LA CORROSION A L'INTERIEUR DES BATIMENTS Français, 1985, 54 pp	13
	KORROSIONSSCHUTZ IM INNEREN VON GEBAUDEN Deutsch, 1985, 54 pp	13
50.	PROTECTION OF STEEL STRUCTURES AGAINST CORROSION BY COATINGS English, 1987, 64 pp <i>This booklet deals with the achievement of an active protection against corrosion in different natural environments of steel structures. By means of fifty concrete examples it is shown how to improve the design of the constructional elements in order to avoid entrapment of moisture and to allow a correct maintenance. Advices are given for a correct choice of the paint system for galvanized surfaces, taking into account the mechanical and aesthetic properties, the requested durability and the environmental conditions. Surface preparation, painting procedures, protection of bolted and riveted connections are other important topics of this booklet.</i>	16
52.	RECOMMENDATIONS FOR CALCULATING THE EFFECTS OF WIND ON CONSTRUCTIONS English, 1987, 138pp <i>The recommendations define methods to calculate the global and local effects of wind on buildings and structures. They are based on the probabilistic definition of the design wind and are applicable to a large variety of constructional shapes.</i>	23



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Code	Title	€
53.	INTERNATIONAL SYMPOSIUM ON STEEL BRIDGES English, 1988, 271pp <i>Includes the 23 papers presented at the Symposium in London in February 1988.</i>	39
54.	EUROPEAN RECOMMENDATIONS FOR STEEL STRUCTURES IN SEISMIC ZONES English, 1988, 115 pp <i>Divided into three parts : general principles and seismic action, rules for structural analysis and rules for structural design correlated to the Eurocode 3.</i>	19
55.	CALCULATION OF THE FIRE RESISTANCE OF CENTRALLY LOADED COMPOSITE STEEL CONCRETE COLUMNS EXPOSED TO THE STANDARD FIRE English, 1989, 144 pp <i>The structural behaviour in fire of composite columns consisting of rolled H-profiles encased in concrete, rolled H-profiles with concrete between the flanges and concrete filled hollow sections is treated with special regard to the basis assumptions and principles, the calculation models, comparisons between theoretical and experimental results and easily applicable design tables. The appendix with about 100 diagrams enables a quick and economical fire resistance design for the fire classes F30 and F120.</i>	25
56.	BUCKLING OF STEEL SHELLS : EUROPEAN RECOMMENDATIONS English, 1988, 4 th edition, 120 pp	20
57.	INTERNATIONAL SYMPOSIUM BUILDING IN STEEL THE WAY AHEAD English, 1989, 450 pp <i>Includes the 24 papers presented at the international symposium in Stratford-upon-Avon (UK) in September 1989.</i>	27
59.	EUROPEAN RECOMMENDATIONS FOR SOUND INSULATION IN MULTI-STOREY BUILDINGS English, July 1990, 30pp	9



Code	Title	€
	<p><i>This fourth edition consists of the content of the third edition with a few amendments (see n° 29), and fairly substantial additions. One amendment pertains to plastic buckling of cylinders subjected to simultaneous axial compression and internal pressure. Other amendments relate to liquid-filled conical shells. The additions cover axially loaded cylinders with stringer and ring stiffeners, unstiffened cylinders under shear and/or torsion, conical shells under various loading conditions, torispherical shells under internal pressure.</i></p> <p><i>In view of the great importance of this question for steel constructions and having sold out its first edition, it has been decided by ECCS to issue a new edition that would also take into consideration the changes in international standards effected in the meantime. This book gives theoretical background and practical solutions which fits particularly well to steel construction.</i></p>	
60.	<p>DESIGN OF LONGITUDINALLY STIFFENED WEBS AND OF STIFFENED COMPRESSION FLANGES English, July 1990, 43pp</p> <p><i>In this book, Design Recommendations have been given for plate girders with transverse stiffeners only, i.e. for the kind of girders mainly used for building structures and also for bridges with limited spans.</i></p> <p><i>The publication concerns usual plated structures with webs subject mainly to in-plane bending and flanges subject to axial forces. It also serves as a basis for the necessary complements of Eurocode 3 or for the corresponding CEN-Committee respectively.</i></p>	13
61.	<p>PRACTICAL ANALYSIS OF SINGLE-STOREY FRAMES English, July 1990, 35pp</p> <p><i>Contains two separate reports :</i></p> <p><i>1) Analysis of single storey pinned-base frames with pitched roof and tapered columns and beams by first-and second-order theory : this paper contains a set of formulae and diagrams which enable the designer to solve the rather involved problem described in its titles by means of a simple calculation. The elastic analysis yields the bending moments and the deformations of the frame, accounting for second-order effects.</i></p> <p><i>2) First-order plastic design of single-storey pinned-base frames : this paper explains in which cases it is justified to design a frame by first-order plastic design without having to bother with second-order effects. In such cases the plastic analysis is quite straightforward and it leads to economical designs.</i></p>	11



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Code	Title	€
62.	<p>EUROPEAN RECOMMENDATIONS FOR SANDWICH PANELS : PART II GOOD PRACTICE English, July 1990, 160pp</p> <p><i>Deals with the application of sandwich components, and is thus principally directed toward manufacturer and user. Part I contains recommendations regarding both the dimensioning and fixing of components and includes statements regarding test procedures for quality control and the determination of characteristic data of material and carrying capacity values.</i></p>	22
63.	<p>MARKET SURVEY ON SOFTWARE FOR CONSTRUCTIONAL STEELWORK English, 1990, 500pp</p> <p><i>Aims at providing those who are involved in steel design and construction with the means to select CAD/CAM software appropriate to their needs. The document is in the form of an inventory of more than one hundred computer programs available throughout Europe. Technical Committee TC5 decided to attribute these programs to seven application areas which are : structural analysis, member selection, detailing, manufacturing, work planning and production control, cost estimation and cost control.</i></p>	30
64.	<p>ACCEPTANCE INSPECTION OF GRADE 10.9 STRUCTURAL FASTENERS INTENDED FOR CONTROLLED TIGHTENING English, 1991, 25pp</p> <p><i>In view of the stress-levels in high strength structural fasteners, and considering the absolute aim of maintaining the clamping forces in the joints during the life-time of the structure, acceptance inspection based only on ISO 3269 is not sufficient. Therefore additional acceptance criteria have been developed.</i></p> <p><i>However in order to avoid excessively high inspection costs, homogeneity of lots has been taken into consideration in order to reduce the number of tests.</i></p>	10
65.	<p>ABRIDGED VERSION OF EUROCODE 3 FOR THE DESIGN OF STEEL BUILDINGS English, July 1991, 65pp</p> <p><i>Provides a means of simple application for daily practical work. It consists of an excerpt from complete Eurocode 3, Part I is "deemed to satisfy" those requirements. It is followed by "Design Aids" and "Worked Examples". The combination of these publications is intended to give the simplest means of</i></p>	18



Code	Title	€
	<i>publication of Eurocode 3, Part I with the objective of promoting the effective use of structural steelwork.</i>	
66.	EUROPEAN RECOMMENDATIONS FOR SANDWICH PANELS PART I : DESIGN AND TESTING English, September 1991, 120pp <i>This document has been updated under publication N° 115</i>	No longer available
67.	ANALYSIS AND DESIGN OF STEEL FRAMES WITH SEMI-RIGID JOINTS English, January 1992, 280pp <i>This document deals with the application of existing knowledge concerning joint behaviour to the analysis and design of steel frames. It includes : an appraisal of suitable joint data; discussion of methods for the analysis of flexibility-connected frames and description of rules for design of both braced and unbraced structures. The document is related to the Principles and Rules of Eurocode 3. It includes a worked example on determination of joint properties, as well as calculations for frame design using the method explained in the text.</i>	36
68.	EUROPEAN RECOMMENDATIONS FOR ALUMINIUM ALLOY STRUCTURES FATIGUE DESIGN English, January 1992, 63pp <i>These recommendations present a general method for the fatigue limit state assessment and provide information for fabrication, inspection and maintenance of structural elements in aluminium alloys. The procedures assume that the structure has been designed in accordance with the other limit state requirements of relevant design codes and standards applicable to that structure, especially ERAAS R1.2, first edition, 1978.</i>	16
70.	SYMPOSIUM INTERNATIONAL PONTS METALLIQUES BRIDGES IN STEEL English/French, April 1992, 341pp <i>The publication includes the 33 conference papers presented at the symposium in Paris on April 1992.</i>	39
71.	EXAMPLES TO EUROCODE 3	20



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Code	Title	€
	<p>English, May 1993, 100pp</p> <p><i>The Design Examples to EC3/1 and E-EC3 have been prepared by the ECCS-Advisory Committee 5 as a design aid in supplement to the complete EC3/1 to facilitate the use of EC3/1 for the design of steel buildings in the ENV-period. They only contain examples to EC3/1 and E-EC3 that are likely to be needed for daily practical design work.</i></p> <p><i>References to EC3/1 are given.</i></p> <p><i>The publication contains three parts and an appendix:.</i></p> <p><i><u>Part 1</u> : Load combination, methods of analysis, frame analysis, bracing system analysis;</i></p> <p><i><u>Part 2</u> Members in compression, members in bending, combined loading-bending and compression, load introduction.</i></p> <p><i><u>Part 3</u> : Bolted connections, welded connections, pin connections.</i></p> <p><i><u>Appendix A</u> : Tabled reduction factors for buckling curves a_0, a, b, c, d.</i></p>	
72.	<p>COMPOSITE BEAMS AND COLUMNS TO EUROCODE 4 English, September 1993, 185pp</p> <p><i>This publication presents useful information and worked examples on the design of composite beams and columns to Eurocode 4 "Design of composite Steel and concrete structures" (ENV 1994-1-1). The information is given in the form of a concise guide on the relevant aspects of Eurocode 4 that affect the design of composite beams and columns normally encountered in general building construction.</i></p> <p><i>Each section of the publication reviews the design principles, gives design formulae and makes cross-reference to the clauses of Eurocode 4. Information on the design of composite slabs is also given, although the publication focuses on the influence of the slab on the design of the composite beam.</i></p> <p><i>Design aids are also presented to assist in selecting the size of steel beams to be used in some applications. Worked examples cover the design of composite beams with full and partial shear connection, continuous beams, and composite columns.</i></p>	31
73.	<p>GOOD CONSTRUCTION PRACTICE FOR COMPOSITE SLABS English, September 1993, 63pp</p> <p><i>This publication reviews good practice in composite slab construction in buildings from the point of view of on-site operations. It contains rules and practices covering most decking available in the European Market and for the</i></p>	16



Code	Title	€
	<i>majority of their potential uses. This document is in agreement with the Eurocodes and gives an answer to many practical and safety questions for composite slabs.</i>	
74.	MULTI-STOREY BUILDINGS IN STEEL - THE SWEDISH DEVELOPMENT English, May 1997, 20pp <i>A particular steel frame system characterised by slim floors and integrated fire protection which has become the dominant system for many buildings in Sweden and other Nordic countries, and which is becoming popular in many other European countries like United Kingdom, Germany, Netherlands and others.</i>	5
75.	FIRE SAFETY IN OPEN CAR PARKS English, October 1993, 110pp <i>The fire requirements applying to the Open Car Parks are quite different from one country to the other in Europe. While an unprotected steel structure is allowed in Germany, it is not permitted in France where a fire resistance of 90 minutes is required.</i> <i>In order to bring the fire requirement regulations together, the Technical Working Group 3.3 of ECCS has decided to publish the Technical Note N°75 "Fire Safety in Open Car Parks" which concludes that no special fire protection measure is needed for the steel structures of Open Car Parks.</i>	22
	SECURITE INCENDIE DANS LES PARCS A STATIONNEMENT OUVERTS French version, September 1995, 110 pp	23
76.	DESIGN OF STEEL STRUCTURES IN SEISMIC ZONES English, November 1993, 260pp <i>The volume intends to give the designers and praticians the basic principles which the new generation of seismic codes are based upon. Particular reference is given to the ECCS Recommendations which have been worked out by TC13 in 1988 and immediately incorporated in the chapter "steel" of EC8. But the volume is much more than a simple background document, because it gives also some recent results which can be used in the improvement of the present codifications under revision.</i>	39





Code	Title	€
77.	<p>CONNECTIONS AND FRAME DESIGN FOR ECONOMY English, November 1996, 20pp ;</p> <p><i>It is now more widely recognised that steel frames can be deliberately designed as "semi-continuous", on the basis of semi-rigid and/or partial strength behaviour. This approach provides greater freedom than the usual procedures, with the connections being chosen by the designer to meet the particular requirements of the structure. The publication gives the resulting benefits and in order that these can be realised, it gives guidance on sources of connection data and introduce design procedures for semi-continuous framing.</i></p>	9
79.	<p>EUROPEAN RECOMMENDATIONS FOR BOLTED CONNECTIONS WITH INJECTION BOLTS English, August 1994, 40 pp</p> <p><i>In this document, the ECCS Committee TC10 "Structural Connections" presents recommendations for the application, design calculation and installation of bolted connections with injection bolts. These are bolts in which the cavity produced by the clearance between the bolt and the wall of the hole is completely filled up with a two-component resin. After injection and curing of the resin, the connection is slip resistant.</i></p> <p><i>Injection bolts have been successfully applied in the Netherlands since 1970. Important applications are road and railway bridges, cranes and crane runway girders. The application in other countries, however, has been far less, mainly because of the lack of accepted guidelines. ECCS TC10 trusts that these recommendations will remove this obstacle.</i></p>	14
80.	<p>INTERNATIONAL SEMINAR ON FIRE SAFE STEEL STRUCTURES - BENEFITS FOR ECONOMY AND ARCHITECTURE English, September 1994, 113 pp</p> <p><i>When structural materials are heated in fires, their physical and material properties change. The most hostile fire environments are generally considered to be those produced by industrial fires involving plastics, solvents, liquid and gaseous fuels, both on-shore and off-shore. The least hostile fire environments are generally in areas with relatively low amounts of fuel with little propensity to spread the fire : car parks and sport halls are typical examples.</i></p> <p><i>This publication gathers all the proceedings of the seminar sponsored by the European Coal and Steel Community to promote the use of steel in the name of safety and economy.</i></p>	16



Code	Title	€
81.	<p>THE USE OF WEATHERING STEEL IN BRIDGES English, April 2001, 30 pages</p> <p><i>Weathering steel bridges in the correct environment provide virtually maintenance free structures of attractive appearance. They do not impose serious problems in design, supply, fabrication, erection or inspection and are to be strongly recommended as an economic solution in many locations.</i></p> <p><i>Parts 1 and 2 provide general information for the guidance of clients, project managers and others who want to appreciate what weathering steel is and what are the benefits of choosing it as a construction material for bridge structures.</i></p>	16
82.	<p>THE FIRE DESIGN INFORMATION SHEETS English - 24 pp</p> <p>FICHES D'INFORMATION RELATIVES AU FEU Français – 24 pp</p> <p>BRAND INFOBLADEN Nederlands - 24pp</p> <p><i>This pack contains information sheets which introduce a wide range of available options for achieving fire resistance of load bearing steel structures. Typically, each information sheet presents an overview of a particular fire protection system, highlights the conditions under which it can be used most effectively, provides simple guidance on the design procedure and, where appropriate, provides details of budget costs. At the top of each sheet is a fire resistance indicator designed to show at a glance the fire resistance that can be achieved using the system described on that sheet.</i></p>	16 16 16
83.	<p>MULTI-STOREY BUILDINGS IN STEEL - DESIGN GUIDE FOR SLIM FLOORS WITH BUILT-IN BEAMS</p> <p>English, September 1995, 110 pp</p> <p><i>This document contains background information on the application of steel built-in beams according to the Swedish Method, and focusing on three types in particular : SFB, IFB and THQ. History and development of various types are briefly described.</i></p> <p><i>Essential information is provided for the design, verification and good practice. Design graphs are presented in order to choose proper global dimensions. Based on Eurocodes, additional rules have been driven for the verification of aspects typical of steel built-in beams. Examples of connections are included for good practice. Special attention is paid to the combination with hollow core slabs and to fire resistance.</i></p>	22



Code	Title	€
	<p>Also available in French:</p> <p>BATIMENTS EN ACIER MULTI-ETAGES-GUIDE DE CONCEPTION POUR LES PLANCHERS MINCES A POUTRES INCORPOREES Version française, août 1996, 110 pp</p> <p><i>Le présent document contient des informations fondamentales concernant l'utilisation des poutres en acier incorporées selon la Méthode Suédoise, et étudie tout particulièrement trois types: SFB, IFB et THQ. L'historique et l'évolution des différents types sont brièvement décrits.</i></p>	23
	<p><i>Des informations essentielles sont données en vue de la conception, de la vérification et du respect des règles de l'art. Des diagrammes de dimensionnement sont présentés afin de permettre le choix des dimensions globales appropriées. Sur la base des Eurocodes, des règles supplémentaires ont été élaborées pour la vérification des aspects particuliers aux poutres en acier incorporées. Des exemples d'assemblages conformes aux règles de l'art sont donnés. Une attention particulière est apportée à l'utilisation combinée avec des dalles alvéolées ainsi qu'à la résistance au feu.</i></p>	
84.	<p>MULTI-STOREY BUILDINGS IN STEEL - CAR PARKS English, 1999 , 20pp</p> <p><i>Multi-storey car parks are very much a unique style of building ; one in which all elements of the structure are exposed to the public. In the past they have been considered dark and squalid places only to by used as a last resort. This does not have to be the case. This publication will give examples of good practical design, that enable the structure to blend in with all environments and show the universality, elegance and economy of a steel frame.</i></p> <p><i>Fundamental design information is given to show how steel, with its ability to accommodate clear spans and minimise column sizes, can help to make a car park a pleasant place to use. The brochure deals with "drive-in" car parks ; alternatives such as automatic car parks are not included.</i></p> <p>Also available in German and French</p>	16
85.	<p>DESIGN HANDBOOK FOR BRACED OR NON SWAY STEEL BUILDINGS ACCORDING TO EC3 English, 191pp, edition 1996</p>	31



Code	Title	€
	<p>The present publication is intended to be a design aid in supplement to the complete document Eurocode 3 - Part 1.1 in order to facilitate the use of Eurocode 3 for the design of such steel structures which are usual in common practice : braced or non-sway steel structures.</p> <p><i>Therefore the "Design Handbook to EC3 for Simple Buildings" presents the main design formulas and rules extracted from Eurocode 3 - Part 1.1, which are needed to deal with:</i></p> <ul style="list-style-type: none"> - elastic global analysis of buildings and similar structures in steel - checks of structural members and connections at limit states - in case of braced or non-sway structures <p>-according to the European standard Eurocode 3 - Part 1.1 (ENV 1993-1-1)</p> <p>Also available in French, German, Spanish, Italian and Dutch:</p> <p>MANUEL DE CALCUL DES BÂTIMENTS EN ACIER À OSSATURE CONTREVENTÉE OU RIGIDE SELON L'EUROCODE 3</p> <p>HANDBUCH FÜR ENTWURF, BERECHNUNG UND BEMESSUNG UNVERSIEBLICHER ODER SEITENSTEIFER STAHLHOCHBAUTEN NACH EUROCODE 3</p> <p>MANUAL DE CÁLCULO PARA EDIFICIOS DE ACERO ARRIOSTRADOS O INTRASLACIONALES SEGÚN EL EUROCÓDIGO 3</p> <p>MANUALE DI PROGETTAZIONE PER EDIFICI IN ACCIAIO CONTROVENTATI O A NODI FISSI RELATIVO ALL'EUROCODICE 3</p> <p>ONTWERP-HANDBOEK VOOR GESCHOORDE OF ZIJDELINGS STIJVE STALEN GEBOUWEN VOLGENS EUROCODE 3</p>	
86.	<p>STEEL BRIDGES SPAN EUROPE Spring 1996, 10 pp</p> <p><i>This brochure defines the advantages of steel in bridges. Recent developments in steelwork production, design and construction techniques have emphasised the advantages of steel, increasing its market share throughout Europe.</i></p>	5
87.	<p>DESIGN MANUAL FOR COMPOSITE SLABS English, November 1995, 166 pp</p>	27



Code	Title	€
	<p><i>This design manual has been produced for engineers as well as project managers in design offices, for engineers in steel construction companies and for engineers concerned with the manufacture of profiled steel sheets for composite construction. It contains a collection of the current knowledge for the design, calculation and construction of composite slabs with profile steel sheeting.</i></p> <p><i>The manual is based on Eurocode 4, part 1.1 chapters 7, 10 and Annex E which deals with composite construction, as well as Eurocode 3, part 1.3 which considers the design of profiled steel sheeting. It also contains complementary information on certain aspects of composite construction not covered in the Eurocodes.</i></p> <p><i>After a general introduction to composite slabs, in chapter 1, the manual presents chapter 2 of the complementary document "Good Construction Practice for Composite Slabs" making the link between construction and design. Chapters 3 and 4 describe the conception, the pre-design and the detailing of structures using composite slabs.</i></p> <p><i>The main part of the manual (chapters 5-9) is devoted to the design approaches for profiled steel sheeting and composite slabs, giving, in particular, data relating to materials, to loads and to the verification of the limit states. Finally, chapter 10 presents a series of numerical examples covering the pre-design, the design of the profile at the construction stage, the design of composite slabs and designs for special situations.</i></p>	
88.	<p>EUROPEAN RECOMMENDATIONS FOR THE APPLICATION OF METAL SHEETING ACTING AS A DIAPHRAGM - STRESSED SKIN DESIGN English, September 1995, 200 pp</p> <p><i>The recommendations are concerned with the design, construction and use of shear diaphragms acting as a stressed skin in thin walled steel decking, roofing or side cladding in buildings. They also include the design, construction and use of sheet steel in frameless structures or substructures such as folded plates, hyperbolic paraboloids and curved shells. They also give design recommendations for the effect of profiled steel sheet in lateral bracing to members and diaphragm action in composite floors.</i></p> <p><i>In principle these Recommendations have been formulated for "steel". But in some chapters additional information is given concerning deviations for aluminium. Without a reference to material the clause is valid for steel.</i></p>	32



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Code	Title	€
89.	FIRE RESISTANCE OF STEEL STRUCTURES - EURO-NOMOGRAM English, Spring 1996, 6 pp	5
	<i>The publication is a design aid to calculate the fire resistance time of unprotected and insulated steel members on the basis of ENV 1993-1-2 and ENV 1991-2.2. It contains a nomogram to calculate the critical temperatures and the corresponding time to reach this temperature for a given profile. The application of the nomogram is explained with 4 worked examples.</i>	
	Also available in French, Dutch and German	5
90.	SURFACE PROTECTION GUIDE FOR STEELWORK IN BUILDING INTERIORS AND FACADES English, 1998, 6pp Also in German and French <i>See summary in publication N°98</i>	exhausted
91.	CASE STUDIES FOR ARCHITECTS November 1996 – September 2002, 16 pp Comments made in English, French, and German(Dutch version is available from the CBLIA)	5
	91-1 Brussimmo House, Brussels, Belgium	
	91-2 L'OREAL Factory, Aulnay la Barbière, France	5
	91-3 TAZ, Berlin, Germany	5
	91-4 RFB Building, Seibersdorf, Austria	5
	91-5 The Guggenheim Museum, Bilbao, Spain	5
	91-6 Turku Academy of Art, Turku, Finland	5
	91-7 Dogan Printing Centre, Ankara, Turkey	5
	91-8 The Airport Terminal, Copenhagen, Denmark	5
	91-9 The Terminal of Charles de Gaulle Airport, Roissy, France	5
	91-10 The New Dome of the former German Reichstag, Berlin, Germany	5
	91-11 Petrol stations by Philippe Samyn	5
	91-12 Lucerne Congress Centre, Switzerland	5
	91-13 Cepezed Head Office in Delft, the Netherlands	5
	91-14 The Eden Project Planthouse, Cornwall, UK	5
	91-15 The Sobek House, Stuttgart, Germany	5
	91-16 TGV Stations in France	5
	91-17 <i>Olympic Stadium of Istanbul, Turkey (under preparation)</i>	
91-18 <i>ING Office Building, The Netherlands (under preparation)</i>		



Code	Title	€
92.	<p>EXPLANATORY DOCUMENT FOR ECCS N° 89 - "EURO-NOMOGRAM" FIRE RESISTANCE OF STEEL STRUCTURES English, March 1996, 25pp</p> <p><i>The "Euro-Nomogram" is a design aid prepared by the Technical Committee 3 of ECCS. It is aimed at facilitating the calculation of the fire resistance of steel sections exposed to the ISO fire. The nomogram is based on ENV 1991-1-2 and ENV 1991-2-2. The methods given in these codes for the evaluation of the steel temperatures are based on time step calculations with temperature dependent variables. In most cases the use of computer programs is therefore necessary. The "Euro-Nomogram" now makes it possible to calculate fire resistance in an easy way. The explanatory document shows the assumptions made and the way in which the nomogram was developed.</i></p>	9
93.	<p>EXECUTION OF STEELWORK TO EC3 - ENV 1090 : PART I GUIDANCE ON PREPARATION English, 1998, 49pp</p> <p><i>This publication has been prepared to introduce specifiers and constructors to the use of ENV 1090-1 for the execution of steel structures.</i></p> <p><i>Chapter 1- General, deals with the scope and context for use of the pre-standard.</i></p> <p><i>Chapter 2- Technical Requirements, deals with the technical content of ENV 1090-1, with twelve sub-sections that cover the corresponding clauses of the Pre-standard and their respective annexes.</i></p> <p><i>Chapter 3- The Project Specification, deals with the interface between the specifier and the constructor. The transfer of information between a purchaser (or the engineer acting as the purchaser's agent) and the constructor is set out in the project specification, and Chapter 4 concludes with comments and recommendations concerning each item of relevant information needed in the project specification.</i></p>	23
94.	<p>BACKGROUND DOCUMENTATION - EUROCODE 1 (ENV 1991) : PART 1 : BASIS OF DESIGN English, March 1996, 210 pp</p> <p><i>This Background document follows the statements of EC 1.1 on a one by one basis. For instance, comments of section 4.2 of Basis of Design can be found in section 4.2 of this Background Document. The intention of the document is to give background information, clarification, examples and recommendations for future developments.</i></p>	11



Code	Title	€
	<p><i>The document was published as a JCSS Working Document by ECCS. The JCSS is the Joint Committee on Structural Safety and is supported by CEB, CIB, ECCS, FIP, IABSE, IASS and RILEM. The status of Working Document implies that the team of authors is considered as a JCSS ad-hoc Working Group and that the document has been discussed and approved in headlines by the JCSS Working Party.</i></p>	
96.	<p>DESIGN HANDBOOK FOR BRACED COMPOSITE STEEL-CONCRETE BUILDINGS ACCORDING TO EUROCODE 4 English, 2000</p> <p><i>The publication n° 96 is intended to be a design aid in supplement to the European Pre-standard ENV 1994-1-1:1992 (always with references to the latter). It provides simplified guidance and facilitates the use of Eurocode 4 for the design of composite structures in common practice: braced composite steel-concrete structures. This handbook, less formal and more user-friendly than Eurocode 4, contains additional explanations on design principles, application rules and, about usual design results. The main design formulas and rules, extracted from Eurocode 4 - Part 1.1, are dealing with elastic global analysis of buildings or similar structures and with checks of structural members at ultimate and serviceability limit states.</i></p> <p>Also available in French, German, Dutch, Italian, Spanish:</p> <p>MANUEL DE CALCUL SELON L'EUROCODE 4 DES BÂTIMENTS CONTREVENTÉS EN OSSATURE MIXTE ACIER-BÉTON</p> <p>HANDBUCH FÜR ENTWURF, BERECHNUNG UND BEMESSUNG UNVERSCHLEBLICHER STAHLVERBUNDHOCHBAUTEN NACH EUROCODE 4</p> <p>ONTWERP-HANDBOEK VOLGENS EUROCODE 4 VOOR GESCHOORDE COMPOSITIE STAAL-BETON GEBOUWEN</p> <p>MANUALE DI PROGETTO RELATIVO ALL'EUROCODICE 4 PER EDIFICI CONTROVENTATI O A STRUTTURA MISTA ACCIAIO-CALCESTRUZZO</p> <p>MANUAL DE CÁLCULO DE PÓRTICOS ARRIOSTRADOS MIXTOS SEGÚN EUROCÓDIGO 4</p>	25



Code	Title	€
97.	<p>THIRD INTERNATIONAL SYMPOSIUM ON STEEL BRIDGES - ROTTERDAM English, October 1996</p> <p><i>From October 30th until November 1st, 1996 a successful 3rd International Symposium on Steel Bridges was held in Rotterdam, the Netherlands, organised by the "Staalbouw Instituut, Staalbouwkundig Genootschap" and "Samenwerkende Nederlandse Staalbouw". In four Sessions the following subjects were covered : "European Market Trends", "Steel Bridges and the Environment", "Optimisation of Steel Bridges", and "Building and maintaining of Bridges".</i></p>	34
98.	<p>SURFACE PROTECTION GUIDE FOR STEELWORK EXPOSED TO ATMOSPHERIC ENVIRONEMENTS English, 1998, 6pp</p> <p><i>This document has been prepared by ECCS TC4. It is intended to provide guidance to engineers and architects concerned with the design of new structures. Where possible, the document is in accordance with existing and proposed ISO and EN standards and represents a consensus of the experience of different European countries. The document does not seek to cover every possible case. The systems suggested are considered to be reasonable, cost effective methods of providing protection in normal European environments.</i></p> <p><i>There is no intention to restrict the specifier's field of choice. In some circumstances other methods of protection not given here may be economic as well as beneficial. New coatings are being developed continuously and the authors wish to encourage such development.</i></p> <p><i>Environmental protection legislation is continually being reviewed and made more stringent – though the rate of change will vary from country to country. As a result some of the coatings given may comply with legislation in some countries.</i></p> <p><i>Environments have been divided into three categories, but there will be variations around and within these categories. For this and other reasons, specifiers must use their judgement and, where necessary, take advice in selecting the optimum system. Any of the contributing bodies, or the manufacturers of protective systems, will be pleased to offer advice on systems for individual projects.</i></p> <p>Also available in German and French:</p>	5



Code	Title	€
	<p>RICHTLINIE FÜR DEN OBERFLÄCHENSCHUTZ VON FREIBEWITTERTEN STAHLKONSTRUKTIONEN Deutsch, 1998, 6 pp</p> <p>GUIDE POUR LA PROTECTION DES SURFACES DES OUVRAGES EN ACIER EXPOSÉES AUX INTEMPÉRIES Français, 1998, 6pp</p>	
<p>99.</p>	<p>MERITS OF STEEL CONSTRUCTION English, 1998, 24pp</p> <p><i>Through their increasing and innovative use of the material, architects and engineers continue to demonstrate the opportunities for steel in construction. This booklet, dedicated to their creativity, simply reflects their works and highlights the merits of steel. Their achievements are illustrated by examples of buildings drawn from across the world, like a display of royal fireworks.</i></p> <p>Also available in French and German:</p> <p>LES MERITES DE LA CONSTRUCTION METALLIQUE Français, 1998, 24pp</p> <p><i>Toujours plus nombreux, les architectes illustrent avec leurs ouvrages les possibilités sans cesse croissantes et renouvelées de l'acier dans le domaine du bâtiment.</i></p> <p><i>Cet opuscule qui leur est dédié n'a pas d'autre but que de se faire l'écho de cette illustration; chacun des avantages de l'acier, ci-après cités, l'est au travers de réalisations originaires de toute l'Europe et conçues pour le plus grand bonheur des maîtres d'ouvrages, à l'image des différents tableaux composant un splendide feu d'artifice...</i></p> <p>BAUEN MIT STAHL – WARUM ? Deutsch, 1998, 24pp</p> <p><i>Beim Planen von Bauwerken nutzen Architekten und Ingenieure in steigendem Masse die gestalterischen Vorzüge des Stahlbaus. Diese Broschüre zeigt an markanten Beispielen, wie aussergewöhnliche, aber auch alltägliche Bauaufgaben in aller Welt mit Stahl beispielhaft gelöst wurden.</i></p>	<p>5</p> <p>5</p> <p>5</p>



Code	Title	€
100.	1997 STATISTICAL BULLETIN OF CONSTRUCTIONAL STEELWORK English, September 1997 <i>Statistics have been collated from 15 European countries. The Bulletin lists, wherever possible, the end use of steel per country over the past five years by market sector - non residential, bridges and hydraulic structures, plus other sectors where appropriate. It also supplies forecasts for production in these sectors for 1997 and 1998. In addition, the Bulletin includes historic and forecast macroeconomic data relevant to the European sector and to the European constructional steelwork industry.</i>	64
103.	GUIDELINES FOR THE APPLICATION OF PRE-STRESSED HOLLOW CORE SLABS SUPPORTED ON BUILT-IN BEAMS English, April 1998, 18 pp <i>This document has been prepared joint by the ECCS and IPHA, representing the European steel construction industry, and the pre-stressed hollow core unit producers respectively. The purpose of these Guidelines is to offer design guidance on the structural requirements for floors in buildings comprising pre-stressed hollow core units supported on various types of beams, but it concentrate on the case where these units are used with built-in beams contained within the slab depth. However, the Guidelines apply to all forms of construction that are non-rigid in terms of the support conditions to the hollow core units.</i> <i>These Guidelines take account of recent research information and good practice, and concern the detailing of constructions consisting of hollow core units on non rigid supports for normal conditions of use and in fire situations. It may be possible to update the guidance offered in the future as more test and research information comes available.</i>	5
104.	MULTISTOREY BUILDINGS IN STEEL – THERMAL AND SOUND INSULATION (CD-ROM under preparation)	



Code	Title	€
105.	<p>GOOD DESIGN PRACTICE - a guideline for fatigue design English, June 2000, 53 pages,</p> <p>This guideline has been designed for project managers in design offices, engineers in steel construction companies and construction survey engineers concerned with the manufacture of structures subjected to fatigue loads induced by frequently changing actions, traffic actions, wind induced oscillations or comparable actions. Contained herein is a review of the current knowledge in fatigue design and the fabrication of fatigue resistant structures.</p> <p>This document contains information about design that is in conformity with the currently available Eurocode 3 pre-standards, which deal with the design of steel structures. Furthermore, it contains information about fabrication aspects not covered in the Eurocodes.</p> <p>The document should be viewed as a source of advice to be consulted before designing, fabricating, or repairing a structure subjected to fatigue. The document is organised as follows:</p> <p><u>Chapter 2</u>: basic fatigue theory, modelling of fatigue actions and strength. The reader interested only in the design and fabrication aspects of fatigue resistant structures should go directly to the next chapters; <u>Chapter 3</u>: factors affecting fatigue controlled by the designer; <u>Chapter 4 and 6</u>: factors controlled by the fabricator/assembler <u>Chapter 5</u>: existing weld improvement methods, that is methods for increasing the fatigue strength of selected details; <u>Chapter 7</u>: principles of the fitness-for-purpose approach, advice on methods for repairing structures during fabrication, erection, or repairing existing structures</p>	11
106.	<p>LONGITUDINAL SHEAR RESISTANCE OF COMPOSITE SLABS : EVALUATION OF EXISTING TESTS English, November 98, 85 pp</p> <p><i>This document has been prepared to facilitate producers of deck profiles for composite slabs to derive design values for longitudinal shear resistance from results of existing tests.</i></p> <p><i>After a general introduction on the intention of the document in Chapter 1, the design and testing procedures given in ENV 1994-1 (Eurocode 4) are presented respectively in chapter 2 and 3. Also in chapter 3 the standard testing procedure of ENV 1994-1 is compared with national standards. In chapter 4 guidelines are given for the re-evaluation of tests so that the design values are consistent with the design rules given in ENV 1994-1.</i></p>	23



Code	Title	€
	<p><i>In chapter 5 a number of worked examples are given to illustrate the procedures.</i></p> <p><i>An appendix is included covering the influence of oiling the sheeting before concreting as provided in the French "Avis technique" procedure.</i></p>	
107.	COMPOSITE BEAMS WITH PARTIAL CONCRETE ENCASEMENT FOR BUILDINGS <i>(under preparation)</i>	
108.	4th INTERNATIONAL SYMPOSIUM ON STEEL BRIDGES – LEIPZIG May 1999 English, May 1999, 255pp <i>From May 17th to May 19th, a successful Fourth International Symposium on Steel Bridges was held in Leipzig, Germany, organised by : Bauen mit Stahl e.V. , Deutscher Stahlbau-Verband DSTV, and the Technische Universität of Dresden. In 6 sessions, the following topics were covered : "Steel bridges in the environment", "Versatility and adaptability", "Durability, protection and maintenance", "Design, research and development", "Steel Bridges in the next century".</i>	41
109.	DESIGN OF COMPOSITE JOINTS FOR BUILDINGS English, February 1999 <i>Across the world, widespread use is made of structural steelwork in frames for multi-storey buildings. Important factors which influence this include speed of construction , adaptability for future use and the low cost of the basic structure. The most cost-effective structural option is often composite steel-concrete construction, whether in the form of composite steel beams and slabs or slim floor systems.</i> <i>This publication describes how beam-to-column and beam-to-beam connections may be deliberately designed with composite action to provide quantifiable end restraint. Guidance on global analysis of frames is included, with both elastic and plastic methods considered. Thus the effects of joint behaviour at serviceability and ultimate limit states can be accounted for. Composite joints require little additional site work in return for substantial benefits in terms of greater load capacity, better performance in service and reductions in steel section. Their use in recent practice includes the prestigious Millennium Tower in Vienna.</i>	34



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Code	Title	€
110-	INTERNATIONAL STEEL CONSTRUCTION CONFERENCE - "STEELING THE COMPETITIVE EDGE" English, September 1999,207pp <i>Proceedings of the Joint ECCS-BCSA International Conference held in London, from 22-24 September 1999. Twenty-two papers are presented.</i>	34
111-	ECCS MODEL CODE ON FIRE ENGINEERING English, May 2001, 220pp The Eurocode on the fire design of structures have been drafted in the early 90's, based on the knowledge generally acknowledged at that time. In the meantime, substantial research has been carried out, more in particular in the field of fire modelling, and of the behaviour of steel and composite steel-concrete structures under fire conditions. Also in various European countries, in-depth experience has been obtained regarding the practical consequences of the Eurocode rules, especially when preparing the related National Application Documents (NAD4S). This has resulted in a vast number of modifications/additions, felt to be necessary to arrive at a 2 nd generation Eurocodes "Fire", which is both more realistic and more economic. Main additions/modifications refer to: introduction of multi-zone fire models, new buckling curves for steel columns, alternative calculation rules for eccentrically loaded steel columns, extension of the application range for concrete filled SHS-columns, new calculation rules for slim floors, alternative calculation rules for composite slabs. The aim of the ECCS Model Code is to present the above improvements, as far as related to the structural fire design of steel and of composite steel and concrete structures. In view of the significant effect of the thermal and mechanical actions on the outcome of the assessment, the discussion is not limited to the ENV 1993-1-2 (Fire Design of Steel Structures), and ENV 1994-1-2 (Fire Design of Composite Steel and Concrete Structures) but includes also ENV 1991-2-2 (Actions on Structures Exposed to Fire).	65
113-	DESIGN TABLES AND GRAPHS FOR COMPOSITE BEAMS TO EUROCODE 4 English, June 2001, 41 pp	60



Code	Title	€
	<p>The publication presents design aids for composite beams using standard hot rolled steel sections and composite floor slabs comprising profiled steel decking and concrete. The steel beams may be either IPE or HE sections, or UB, or UC sections in their respective steel grades, and using a partial safety factor for steel of 1.1 in most cases. The shear connectors are welded studs of typically 19 or 22 mm diameter. The design principles and application rules follow ENV 1994-1-1: Eurocode 4.</p> <p>The design aids take the form of indirect design tables giving member resistances and stiffnesses, and direct design tables giving the load-span capabilities of each beam size. The direct tables address the design of simply supported beams as secondary beams, or as primary beam supporting other beams. Graphs are presented for the design of simply supported beams using IPE and HE sections, including also partially encased beams.</p> <p>Additional information is provided on fire protection of composite beams, including partially encased beams. In this case, the approximate amount of reinforcement is given. Worked examples illustrate how to use the design tables and graphs in practice. A total of 70 tables and 9 graphs is presented, which cover most design cases.</p> <p>Please note that, in this book, reference is made to publication n° 72.</p>	
114-	<p>PRELIMINARY WORKED EXAMPLES ACCORDING TO EUROCODE 3 PART 1.3 English, September 2000, 200 pages</p> <p>As mentioned in the preface in February 1996, the ENV 1993-1-3 Eurocode 3: Design of steel structures; Part 1.3: General rules, Supplementary rules for cold formed thin gauge members and sheeting has been published by CEN. This ENV is a pre-standard and will be revised to a definite standard after the engineering practice has had the possibility to comment the document.</p> <p>To check the workability and accuracy of ENV 1993-1-3 it has been decided by ECCS TC7 to prepare a number of calculations related to cold formed structures. The publication of these calculations provides the designing engineers a number of examples and shows how to handle the different items in ENV 1993-1-3.</p>	25



Code	Title	€
115	<p>EUROPEAN RECOMMENDATIONS FOR SANDWICH PANELS PART I - DESIGN English, 2001, 161 pp</p> <p>These recommendations apply to roof or wall cladding, ceiling and internal wall panels in the form of a sandwich in which the inner and outer faces are formed from thin metal sheets and the core is a relatively low density material having both stiffening and insulating properties. The components of the sandwich must be bonded together in such a manner as to provide a composite load-bearing panel. Adequate bonding may be achieved by using the inherent bonding capability of certain rigid plastic foams or by the use of separate adhesives. The design equations may only be applied to fully bonded panels. If either face is only partially bonded to the core, all components of resistance must be defined by testing paying due regard to long-term effects.</p> <p>The document as a whole is concerned with structural sandwich panels designed to resist such external loading conditions as wind and snow. For internal construction, less onerous requirements are also formulated.</p> <p>The design of sandwich panels is based on simplified calculation models together with basic material and structural tests. However, the use of more advanced (numerical) methods of analysis and/or full scale testing may be required in certain cases in order to take into account special properties of the panel systems. The use of such advanced methods is outside the scope of these Recommendations.</p>	30
117	<p>5th International Symposium on Steel Bridges – Barcelona, March 5, 2003 English, 2003315 pp.</p> <p>Proceedings of the Symposium</p>	50
118	<p>Design Examples for the Use of Light Gauge Steel in Steel Framed Housing according to ENV 1993-1-3:1996</p> <p>This publications aims at assisting the engineers in applying ENV 1993-1-3 in the design of light gauge steel members in steel framed buildings. It provides engineers examples where basic components of steel-framed house are designed according to ENV 1993-1-3.</p> <p>The examples are based on the Light Weight Steel Framing Manual (1991) published by Canadian Sheet Steel Building Institute (CSSBI) and new Lightweight Steel Framing Design Manual (January 2000) of AISI prepared by Mr. Tom Trestain.</p>	40

(Revised in April 2004)



External Publications(*)

(*) Available at ECCS

Title	Price
<p>◆ FIRE ENGINEERING DESIGN FOR STEEL STRUCTURES : STATE OF THE ART. International Iron & Steel Institute.</p> <p><i>It Assembles for the first time a world wide view of modern fire engineering techniques. It gives:</i></p> <ul style="list-style-type: none">- <i>a rapid overview of the new and sophisticated engineering approaches which have emerged since the 1980s thanks to the availability of improved computer techniques.</i>- <i>insights into developments world wide which will influence fire design in your country.</i>- <i>a summary of the latest design tools including PC diskettes and how to obtain them.</i> <p><i>Its colour-coded, user-friendly layout will help you find your way around an impressive amount of technical data, some 50 photos and 100 computer-drawn tables and diagrams.</i></p>	<p>€</p> <p>48</p>
<p>◆ INNOVATIONS IN STEEL - ROOFS AND FACADES AROUND THE WORLD International Iron & Steel Institute</p> <p><i>The subject of steel walling and roofing is very diverse for a single brochure. To simplify, contents are grouped by building functions into each of seven categories: Residential, exhibition, administration, education, production / industrial, sports, transport. Examples have been selected from around the world for their practicality, innovation, and ability to resolve a particular issue of design. All share one commonality – steel in a variety of forms and colours has satisfied project needs and achieved an aesthetically pleasing solution.</i></p>	<p>5</p>

VIDEO TAPES

Bridges to the future:

Educating video tape showing the Tacoma Bridge casualty (28min) € 32

Edited by the "Canadian Institute for Steel Construction" (English or French).

