

ANNEX 13

**NATIONAL ANNEX  
TO STANDARD**

**SFS-EN 1993-1-10 EUROCODE 3: DESIGN OF STEEL STRUCTURES.  
Part 1-10: Material toughness and through-thickness properties**

**Preface**

This national annex is used together with Standard SFS - EN 1993-1-10: 2005.

This national annex sets out:

The national parameters for the following paragraphs in Standard SFS-EN 1993-1-10 where national selection is permitted:

- 2.1(2) Explanation
- 2.2(5) Note 1
- 2.2(5) Note 3
- 2.2(5) Note 4
- 3.1(1).

## 2.1 General

2.1(2)

Explanation:

**Note.** Requirements for fracture toughness for elements only in compression the recommendations of 3.2.3(3)B of Standard SFS-EN 1993-1-1 should be applied, see National Annex of Standard SFS-EN 1993-1-1.

## 2.2 Procedure

2.2(5), Note 1

Other reliability requirements are not given. The recommended value  $\Delta T_R = 0$  °C should be used. In addition the rules of the National Annex of Standard SFS-EN 1991-1-5 should be used.

2.2(5), Note 3

The Table 2.1 should be applied as such.

2.2(5), Note 4

The Table 2.1 may be applied up to steel grade S690. Values for S700 should be taken from Standard SFS-EN 1993-1-12. Values for some other steel grades are also given in Standard SFS-EN 1993-1-12. For steels according to Standard SFS-EN 10149-2 and Standard SFS-EN 10149-3 Table 2.1a (FI) should be used. See also clause 3.1(2) of National Annex of Standard SFS-EN 1993-1-1.

**Table 2.1a (FI):** Maximum permissible values of element thickness  $t$  in mm for steels according to Standards SFS-EN 10149-2 and SFS-EN 10149-3

Steels according to Standards SFS-EN 10149-2 and SFS-EN 10149-3																								
Steel grade	Sub-grade	Charpy energy CVN		Reference temperature $T_{Ed}$ [°C]																				
		at T [°C]	$J_{min}$	10	0	-10	-20	-30	-40	-50	10	0	-10	-20	-30	-40	-50	10	0	-10	-20	-30	-40	-50
				$\sigma_{Ed} = 0,75 f_y(t)$						$\sigma_{Ed} = 0,50 f_y(t)$						$\sigma_{Ed} = 0,25 f_y(t)$								
S260	NC	-20	40	140	115	100	80	70	60	50	185	160	135	120	100	85	75	200	200	195	170	150	130	115
S315	NC,MC	-20	40	125	100	85	70	60	50	40	170	145	120	105	90	75	65	200	200	185	160	140	120	105
S355	NC,MC	-20	40	110	90	75	60	50	40	35	155	135	110	95	80	65	55	200	200	175	150	130	110	95
S420	NC,MC	-20	40	95	80	65	55	45	35	30	140	120	100	85	70	60	50	200	185	160	140	120	100	85
S460	MC	-20	40	90	70	60	50	40	30	25	130	110	95	75	65	55	45	200	175	155	130	115	95	80

**NOTE 1 :** Requirement for fracture toughness for these steels should be determined according to option 5 in section 11 of Standard SFS-EN 10149-1.

**NOTE 2 :** Thickness range according to Standard SFS-EN 10149 : max. 20 mm

## 3.1 General

3.1(1)

Class 1 should be used.