

## NORMES VEHICULES

**STEEL FLAT PRODUCTS  
HOT OR COLD ROLLED  
GRADE XC 68**

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**NO USE RESTRICTION***This is a translation, the French original shall be used in all cases of litigation**Date of translation : 09/06/2003***CONTENTS**

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**1. OBJECT**

This norme defines the characteristics of steel flat products, grade XC 68 supplied in various conditions and in the form of strip in rolls and flats.

It must be supplemented by the following documents :

- B53 3020 (Sheets and strips) "Designation- Symbols".
- B53 3050 (Sheets and strips) "General supply requirements".
- B53 3055 (Sheets and strips) "Metallurgical requirements-Tests".
- B53 3070 (Sheets) B53 3075 (Strips) "Specific technical requirements".
- B53 3072 (Sheets) B53 3077 (Strips) "Dimensional requirements".

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## 2. CHARACTERISTICS OF PRODUCTS IN THE DELIVERY CONDITION

### 2.1. CHEMICAL COMPOSITION (%)

C	Mn	Si	Cr	Ti	P	S	Al
0,65	0,60	0,15	0,20	≤0,010	≤0,025	≤0,015	≤0,050
0,73	0,80	0,25	0,30				

### 2.2. CHARACTERISTICS IN THE REFERENCE CONDITION

Condition	Hardness
Oil quenched from 830°C	HRC ≥ 58 HV ≥ 653

### 2.3. CHARACTERISTICS IN THE DELIVERY CONDITION

These characteristics are guaranteed for 6 months from the time of availability.

Designation	Condition	Rm (MPa)	Re (MPa)	Hardness			A(%) min.		AFNOR Grain structure (1)
				HRB	HV	HRC	e < 3	e ≥ 3	
XC 68 N	Normalised	750 950	450 750	98 105		20 30	≥ 9	≥ 13	5 to 8
XC 68 G	Spheroidised	520 600	360 470	82 90			≥ 20	≥ 25	5 to 8
XC 68 E	Work hardened	900 1200				25 38			
XC 68 T 12	Hardened + tempered	1180 1370			370 415	38 42			
XC 68 T14	Hardened + tempered	1370 1520			415 460	42 46			
XC 68 T16	Hardened + tempered	1520 1760			460 500	46 50			

(1) In addition, microscopic examination must reveal :

- a clean metal, without significant inclusions or blowholes,
- a non-banded structure with uniform grain in form and size.

### 2.4. DECARBURISATION

No decarburisation is permitted.

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### 3. EXPRESSION ON DOCUMENTS

The material is designated as follows :

**- Engineering documents**

- Grade, followed by the reference number of this norme in brackets.
- Thickness (toleranced, if applicable).

**Example :**

XC 68 (norme B53 3790).

e = 0,8 mm  $\pm$  0,03 mm.

**- Manufacturing documents**

According to the manufacturing process, it is the responsibility of the Manufacturing department of the Group, with the agreement of the laboratories, to expand the engineering designation :

- by details of the manufacturing method (sheet, strip, hot or cold rolled, ...),
- if necessary by the index of the specific delivery condition (N, G, E, T12, T14, T16).

**Example :**

F XC 68 T12 (norme B53 3790).

e = 0,8 mm.

( ie in plain language, cold rolled strip, XC 68, condition T12).

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## 4. RECORDS AND REFERENCE DOCUMENTS

### 4.1. RECORDS

#### 4.1.1. CREATION

- OR : 01/03/1983 – CREATION OF THE NORME.

#### 4.1.2. SUBJECT OF THE MODIFICATION

- B : 16/10/1996 – INTRODUCED INTO IDEM (*French only*).
- C : 21/11/1997 – CORRECTION TO THE INTRODUCTION INTO IDEM.

### 4.2 REFERENCE DOCUMENTS

#### 4.2.1. PSA DOCUMENTS

##### 4.2.1.1. Normes

B53 3020, B53 3050, B53 3055, B53 3075, B53 3077.

##### 4.2.1.2. Others

#### 4.2.2. EXTERNAL DOCUMENTS

### 4.3. EQUIVALENT TO:

### 4.4. CONFORMS TO:

### 4.5. KEY-WORDS