

**APPLICATION OF BENOR MARK IN
SECTOR OF THE REINFORCING STEEL PRODUCTS**

METHODS OF ASSESSMENT APPLICABLE TO
“USERS OF THE MARK” – MANUFACTURERS / DISTRIBUTORS
CARRYING OUT TRANSFORMATIONS

TECHNICAL DOSSIER

MANUFACTURING

(Appendix: 1 file)

TECHNICAL DOSSIER

The present note constitutes a guide for the establishment of a technical dossier in accordance with the document TRA 500 and TRA 283.

The groundwork of this file is given in appendix.

Only pages 1 and 2 are imposed.

The document is applicable to the manufacturer and the distributor carrying out transformations.

In this document the term manufacturer means either cut and bender according to TRA 500 or distributor carrying out transformations according to TRA 283.

Only the relevant paragraphs of the attached model shall be included.

The inspection body **must** be informed of each modification.

A. Flyleaf with mention of:

- A.1.** TECHNICAL DOSSIER MANUFACTURING.
- A.2.** Reference documents: PTV 306 and RA 500
- A.3.** Number of pages.
- A.4.** Statute of the file: project, final.
- A.5.** Inspection body: checking, agreement, date, seal, signature.
- A.6.** OCAB: checking, agreement, date, seal, signature.
- A.7.** Manufacturer: name and number of distributor to the OCAB.
- A.8.** Remarks of the inspection body.
- A.9.** Remarks of the Manufacturer.
- A.10.** Remarks OCAB.
- A.11.** Table taking again **all the** modifications of the technical dossier: revision index, object of the modification, page(s) concerned, date of the modification.

B. Declaration of the manufacturer.

C. Contents.

- D. Complete Manufacturer Nomination (name, addresses supplements, n° Tel., n° fax,...)**
- E. Nomination the persons in charge of the quality controls and their substitute(s) (name and function).**
A flow chart of the company can possibly be joined.

1. File of straightening, cutting and bending

- 1.1 Steel to be worked**
- 1.2 Machine of straightening (including shear and machine of bending)**
- 1.3 Steel and diameters after use of the machines of cut, bending and straightening**

2. File of welding

- 2.1 Welders**
 - 2.1.1 Example of card of welder**
 - 2.1.2 List welders**
- 2.2 Welding machines**
 - 2.2.1 Semi-automatic welding Machines**
 - 2.2.2 Automatic welding Machines**
 - 2.2.3 Spot welding Machines - Type of connection**

3. File of production control

- 3.1 Description of the periodic type of control of reinforcing steel (rectified or welded)**
- 3.2 Description of the diagram of control**
- 3.3 Organization and control of the production and the control of reinforcing steel**
- 3.4 Training of the welders**
- 3.5 Control specific documents**
- 3.6 Treatment of reinforcing steel not accepted**
- 3.7 Control procedures of reinforcing steel worked (coming from Manufacturers not BENOR)**
- 3.8 Other types of connections**
- 3.9 Accessories (except BENOR)**
- 3.10 Secondary Treatments (except BENOR)**

4. Description of the equipment of measurements and tests**5. Description of the plan of control about the means of production****6. Others**

- 6.1 Example of card of the administrative methods of control**
- 6.2 Example of card of methods of technical control**
- 6.3 Example of card of nonconformity**

TECHNICAL DOSSIER: MANUFACTURING of steels (PTV 306 and TRA 500)	Project <i>f</i>	Final <i>f</i>
Number of pages X/Y		

	Inspection body	OCAB	Manufacturer	
	Checked <input type="checkbox"/>	Checked <input type="checkbox"/>	Name	
	Agreement <input type="checkbox"/>	Agreement <input type="checkbox"/>		
Date			Number	
Name Initials Seal			<ul style="list-style-type: none"> - Straightening <input type="checkbox"/> - Cut with length <input type="checkbox"/> - Bending <input type="checkbox"/> - Welding <input type="checkbox"/> 	
Remarks of the inspection body				
Remarks of the Manufacturer				
Revision Number	Object of the modification		Page (S) concerned (S)	Date of the modification

Seal of the OCAB		Name of the org. of control	Initials jobbing	Revision n°	Date	Page

Declaration of the Manufacturer

The technical dossier (DT) herewith formed integral part of the convention of the company:

N° distributor with the OCAB: Revision Number of the DT: Name: Street and n°: Postcode and locality: Country: Tel.: Fax:

of authorization of use of mark BENOR for the MANUFACTURING of steels in accordance with the implementing regulation 500 and the PTV 306 carried out in its seat of manufacturing:

Name: Street and n°: Postcode and locality: Country: Tel.: Fax:
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The manufacturer declares that the contents of this technical dossier are entirely in conformity with the real situation with the seat of manufacturing at the date of the signature.

Done in

The manufacturer,

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Tables Of Content

Revision Number DT	Titrate	N° page	Date

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Presentation

The manufacturer

N° OCAB:

Name:

Complete Address: Street n°

Postcode Locality

Telephone:

Telefax:

Flow Chart

Description as well of the administrative organization as production engineering

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Staff quality

Person In Charge of the service quality

	Holder	Substitute
Name		
First Name		
Function		
Initials		
Signature		

Staff of control

	Name and First Name	Function	Initials	Signature
1				
2				
3				
4				
5				

Laboratories

Name	Addresses		Fax

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1. File Straightening

1.1 Steel to be worked

Recall: - all steels to be worked must be BENOR, except for steel BE 220 S

- All steels not benorisable as all the accessories are indicated on the delivery order.

N° steel	<u>Nature:</u> Bars, crowns, lattice, rods rectified by another Manufacturer,... /smooth, with prints, bolts	<u>Process of development:</u> , micro- alloyed, drawn bar without reduction of section, cold drawn,...	<u>Grde:</u>BE 500 () (E) (R) (T) S, DE 500 BS, not benorisable	<u>Source:</u> producer + n° OCAB Manufacturer + n° OCAB (*)	Range of the diameters
A1					
A2					

.....

(*) This table does not relate to the steels bought and resold such as.

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1.2 Machine of Straightening, cutting and bending

N° Machine M_i	type (Rollers or rotor, simple O doubles)	Identification: mark, standard, year of construction,...	Operation carried out: cross, Straightening, bending	N° Appendix (*)
M1				
M2				

(*) The appendix includes:

- the description of the machine M_i
- parameters of adjustment of the machine M_i as well as the acceptable variations according to steels used A_j

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1.3 Steels and diameters worked by the machines of cutting, bending and/or Straightening

N° Machine M _i	N° steel A _j	Range of the diameters	Operation carried out or products manufactured (*, **)

(*) Case of use of a machine for a specific product.

(**) The method of control for the determination of the radius of curvature and the corner of bending is... and is described in a precise way in the part “Description of control of planning and the means of production”

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2. File welding

2.1 Welders

- Description of the category of the welders 1 (\varnothing_{\min} which can be welded is...)
- Description of the category of the welders 2 ($\mu\varnothing_{\max}$ which can be welded is...)
- Parameters of welding: if the duration of the welding and the products of welding (\varnothing of the electrode) change according to the connection to make, use the table of the §2.2.3 then and indicate the duration of the welding and the products as parameters.

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2.1.1 Example of card welder

The supplemented individual record sheets of all the welders are taken again in the register of the production

N°	Photograph (standard identity card)	Coordinates of the Manufacturer Name and first name of the welder
<u>Method of welding (+ welding) and possibly category (1 or 2):</u>		
<u>Type reinforcing steels which must be welded.</u>		
<u>Program tests carried out for approval and goes back to those:</u>		
<u>Description of the last welding carried out:</u>		
<u>Statute of reception by type (initial, periodic, revision)</u>		
<u>Date to which the welds were sampled:</u>		
<u>Date to which the welds underwent a test:</u>		
<u>Results of the tests (included the follow-up if the results are not satisfactory)</u>		
<u>Date to which the qualification was granted:</u>		

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2.1.2 Example of list of welders

N°	name	rank
1		
2		
...		

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2.2 Welding machines

2.2.1 Machines of semi-automatic welding

N° Machine M_i	Identification: mark, standard, year of construction, ...	Products of welding: mark, standard, Ø wire, gas	statute (2)	N° Appendix (*)

Welders concerned⁽¹⁾:

- Number:

- Names:

(*) The appendix understands: - the description of the machine M_i;

- parameters of the machine M_i as well as the acceptable variations according to steel used A_j

- the types of assemblies carried out are described by means of the table attached which gives, if necessary, parameters used according to the assemblies (parameters A, B, C, p. e.g. time of welding)⁽¹⁾.

⁽¹⁾ if 2 methods of semi-automatic welding are present, it is necessary to separate information.

⁽²⁾initial, periodic or revision.

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2.2.2 Automatic Machines of welding

N° Machine M _i	Identification: mark, standard, year of construction, ...	Name of the trained operators	statute (1)	N° Appendix (*)

(*) The appendix understands: - the description of the machine M_i;

- parameters of adjustment of the machine M_i like their acceptable variations according to steel used;

- the types of assemblies carried out are described by means of the table attached which gives the parameters used according to the assemblies (parameters A, B, C,...). To Envisage a table by type and mark of the machine.

⁽¹⁾initial, periodic or revision.

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2.2.3 Spot welding - Types of assemblies

- Welding process:

- Machines:

Welded Reinforcements		Transversely welded Ø (mm)											
Ø (mm)	Steel (N° "A _j ")	6	8	10	12	14	16	18	20	25			40
		Parameters (A, B, C...) (*)											

(*) The empty left boxes represent assemblies which are not welded by points.

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3. File of production control

3.1 Description of the type periodic inspection of worked reinforcing steel (rectified and/or welded)

- Person in Charge;
- Recording;
- Follow-up
- ...

3.2 Description of the control scheme

(at least points mentioned again in the TRA500)

The diagram of approval must define the recording and check operations of those so as to cover all the activities at the beginning of the entry of steel, and marking and identification of the products so that the conformity of the delivered products is guaranteed and the assured traceability.

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3.3 Organization and control of the manufacturing and control of reinforcing steel

Plan taking again the machine installation of with their designation, the storage sections, the advance of steels during the production, ...

Description of the organization of the production since the reception of the order

- Control of the plans of reception and delivery forms (data missing, ...).
 - Investigation of what is not achievable or which does not respect the standards and which will be the object of exemptions.
- ⇒ Document authorizing the drafting about manufacturing OF with remarks so of the exemption(s) or missing data are expected. This document can, for example, appear itself as a simple card which accompanies the plans and/or delivery forms.

... until the delivery with including the exemptions which are the consequence of non realizable products or not complying with the regulations of standards.

Model of OF, models of label (possibly different colours).

Model of label.

Model of delivery form.

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3.4 Training of the welders

3.5 Document management specific

3.6 Treatment of reinforcing steels not accepted

3.7 Control procedure of reinforcing steel worked (coming from power stations of reinforcements not BENOR)

3.8 Statement of other assemblies

Description of possible other assemblies applied: clips, son of binding, adhesives,...

3.9 Accessories (except BENOR)

Description of the additional utilities: sleeves, pipes, anchorings, means of lifting,...

3.10 Secondary Treatments (except BENOR)

Description of the various secondary treatments applied

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4. Description of the measuring and test equipment

The means with which can be examined during the manufacturing of a product for which the manufacturer obtained enabling for the use of the mark BENOR, which the criteria of TRA 500 and PTV 306 are respected; and this for the complete production under mark BENOR starting from supply (material BENOR) until the delivery of the worked product, including the reception and the analysis of the documents (forms and plans), the exemptions of the documents by the manufacturer at his own customer,...

- Equipment for the execution of the tensile test;
- Equipment for the measuring of the geometry of the ribs or imprints;

- Method of control for the determination of the radius of curvature and the angle of bending
- Apparatus concerning the control of the welded joint (8Ø on 8Ø bending on mandrel of 20 mm on welding beyond 180°) + recording, identification and conservation of the samples of test

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5. Description of the plan of control concerning the means of production

- Execution of controls
- Recording of controls
- Marking and identification

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6. Others

6.1 Example of card of execution of specific control related to administration

Date from Control:

N° of the order concerned (PO):

Person in Charge of the object of control:

Controlled manufacturing:

Result of control:

- OK
- Observations without nonconformities OK
- Observations with nonconformities (NC file) with follow up by the responsible person

Observation (S):

Date, name and signature

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6.2 Example of specific control sheet in technical matter.

N° of Control	N° of Machine	Operator	N° of order. (OF)	Reference Mark concerned (on the OF)	Control diameter	And source Quality Control of steel	Other controls carried out	Observations (possibly card of nonconformity)

Date, name and signature

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6.3 Example of card of nonconformity

<u>Concern:</u>	<input type="checkbox"/> Control command
	<input type="checkbox"/> Control about manufacturing
	<input type="checkbox"/> Control on machine
	<input type="checkbox"/> Control storage
	<input type="checkbox"/> Control delivery order
	<input type="checkbox"/> Control loading
	<input type="checkbox"/> Specific Control Sheet related to administration N°
	<input type="checkbox"/> Specific Control Sheet in technical matter N°
	<input type="checkbox"/> Complaint of the customer

N° of order (OF):	Name of the customer:
N° of the delivery order:	Name of the person in charge of control:
Delivery date:	Date from the report:

Description of nonconformity:

Proposal for corrective measures:

Name of the person entitled to judge:	Opinion: favourable <input type="checkbox"/> unfavourable <input type="checkbox"/>
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Date and signature,

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