

**ADHESIVES, SEALANT, COATINGS
SUITABILITY FOR BEING COATED WITH PAINT**

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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 : 08/01/2003***FOREWORD**

*This document is in technical conformity with méthode d'essai RNUR n° 1101.
It shall not be modified without the agreement of RNUR.*

1. OBJECT AND FIELD OF APPLICATION

This method is to determine the suitability of adhesives, sealants and coatings for being covered with paint:

- either dipped primer (simple or electrophoretic) + intermediate layer + finish,
- or intermediate layer + finish,
- or finish only.

It applies to adhesives, adhesive sealants, sealing mastics, anti chip products applied, either in extruded, sprayed or pre-formed beads or as a layer and likely to be covered with paint.

2. PRINCIPLE

The product is deposited on a sheet metal plate, either in the form of beads or in the form of a layer. The assembly is treated as follows :

- application of paints and baking in accordance with the range specified in the documents,
- exposure to heat and to the rays of the solar lamp (3.6.). The examination is then undertaken.

3. EQUIPMENT**3.1. CORDOGRAPH IN STAINLESS STEEL**

(see appendix 2).

3.2. TEMPLATE

thickness 1 mm with minimum opening 50 x 50 mm.

3.3. EXTRUSION EQUIPMENT FITTED WITH SPRAY GUN

fitted with a 3 mm diameter nozzle.

3.4. SPRAYING EQUIPMENT

adapted to the application conditions.

3.5. VENTILATED OVEN

controlled from + 20 to + 250°C accurate to 1°C.

3.6. SOLAR LAMP

PHILIPS HPLR 400 W fitted with a NER 400 reflector (see appendix 4).

3.7. PLATES

in sheet steel 120 x 200 mm oiled, phosphated or primer.

5. TESTS

5.1. MIGRATION TEST

Place the test specimens in the oven (3.5.) regulated to $100^{\circ}\text{C} \pm 1^{\circ}\text{C}$ for 16 hours. Then expose them to the solar lamp (3.6.) for 72 hours. Part of each test specimen may, if required, be protected beforehand by a mask.

5.2. TEST FOR CHECKING ADHESION OF PAINT ON SOILED PART

Carry out the cross-hatching test according to méthode d'essai D25 1075 on the part corresponding to soiled area N° 3 and on the non-soiled area N° 2 for comparison (see appendix 3).

5.3. ADHESION OF PRODUCTS TO SUBSTRATE

Carry out manual tearing-off by peeling.

6. EXPRESSION OF RESULTS

6.1. APPEARANCE AFTER STOVING OF THE COATINGS

Indicate all possible defects, such as blisters, cracks, non-adhesion of paint, etc.

6.2. MIGRATION

Indicate, according to the circumstances :

- Diamigration (staining by migration through the coating).
- Lateral migration (staining beyond the contact area).
- Absence of migration.

If applicable, indicate the grading of the staining in relation to the grey scale, or variation in colour of the finish paint caused by the presence of the product after exposure to the solar lamp (3.6.).

A distinction is made in regard to the contrast which may exist between areas 1 and 2 on one hand, and 3 and 4 on the other (see appendix 5).

6.3. ADHESION

- Of the product : indicate the form of failure obtained, either cohesion failure, or complete or partial peeling.
- Of the finish paint : indicate according to the cross-hatching test, by comparison between areas 2 and 3 any alteration in the adhesion of the paint layer.

7. TEST REPORT

Apart from the results obtained, indicate in the test report :

- the type test specimen used (beads or layers),
- the colour and type of finish paint used,
- the specific conditions of the test if these differ from the specifications in paragraph 5.1,
- the anomalies likely to have influenced the result.

APPENDIX 1

DESIGNATION OF DIFFERENT PHASES	DESIGNATION OF SURFACE FINISH OF SHEET METAL							
	OILED (1)		PHOSPHATED (2)	PRIMED BY DIPPING			PRIMED BY SPRAYING	
	A	B	C	(3) D	(3) E	(4) F	(5) G	(5) H
1. Deposition of product	x	x	x	x	x	x	x	x
2. Wiping of area n° 3	x	x	x	x	x		x	x
3. Removal of adhesive papers protecting areas 1 and 2	x	x	x	x	x		x	x
4. Degreasing of areas 1 and 2 and the face not covered by the beads with a solvent of petrol F type or other	x	x						
5. Application of the coat of dipped primer paint : - either simple dipping (solvent or water) - or electrophoretic painting (anaphoresis or cataphoresis)	x	x	x					
6. Stoving in ventilated oven	x	x	x	x		x		
7. Application of a coat of intermediate paint by spray gun according to méthode d'essai D59 1170		x	x	x	x	x		
8. Stoving in ventilated oven		x	x	x	x	x	x	
9. Application of a coat of finish paint according to méthode d'essai D59 1170	x	x	x	x	x	x	x	x
10. Stoving in ventilated oven	x	x	x	x	x	x	x	x

(1) Oiled steel sheets (in accordance with méthode d'essai D59 1160).

(2) Phosphated steel sheets (according to norme PEU 1183 (Méthode d'essai association)).

(3) Primed steel sheets with dipped solvent or electrophoretic paint (according to méthode d'essai D59 1509) with stoving.

(4) Primed steel sheets with dipped solvent or electrophoretic paint (according to méthode d'essai D59 1509) not stoved. Operations carried out without using adhesive paper (3.11.).

(5) Spray painted, primed steel sheets (according to méthode d'essai D59 1170).

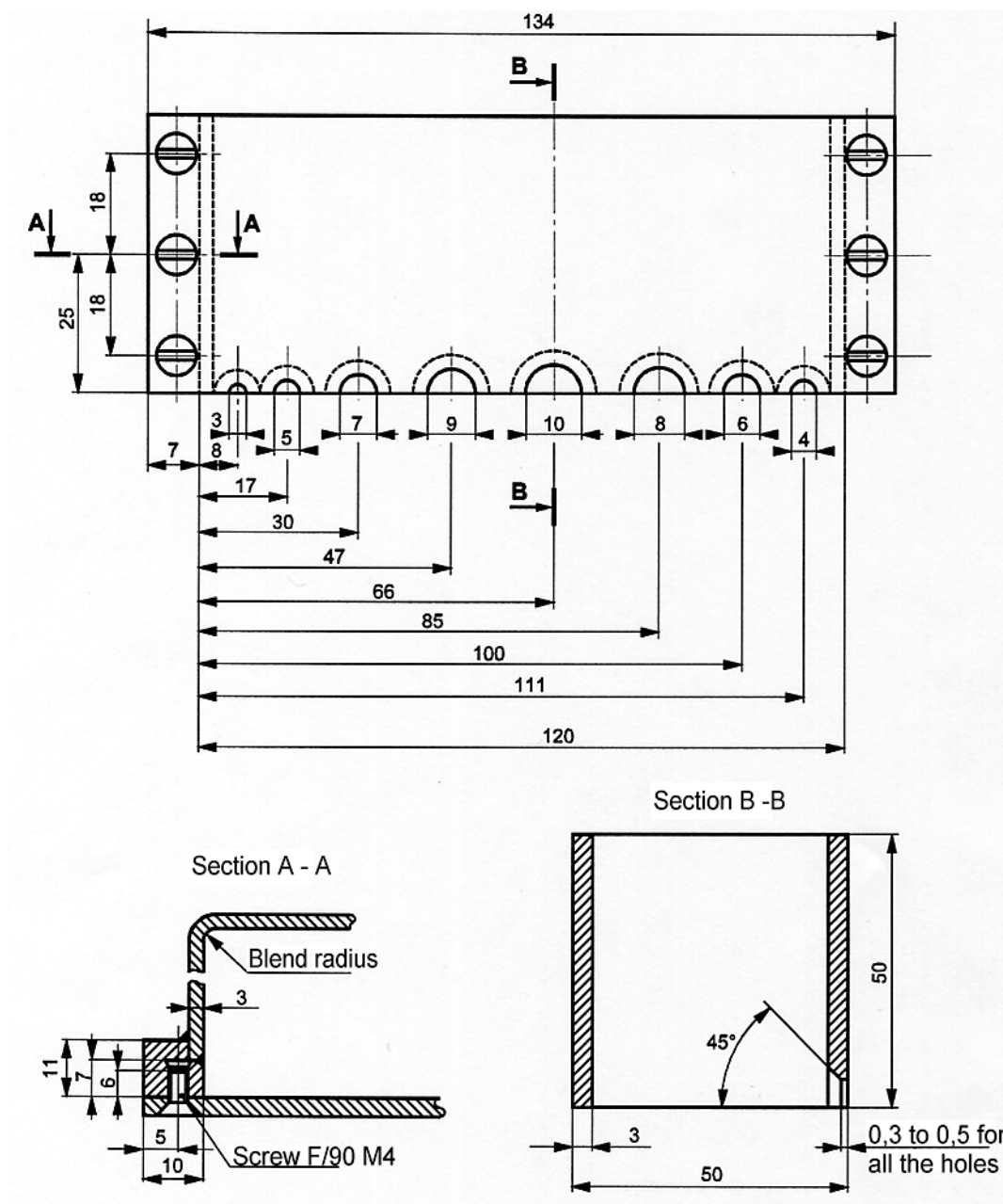
Remarks :

Other ranges can be used. In this case, it is advisable to describe them in the test report.

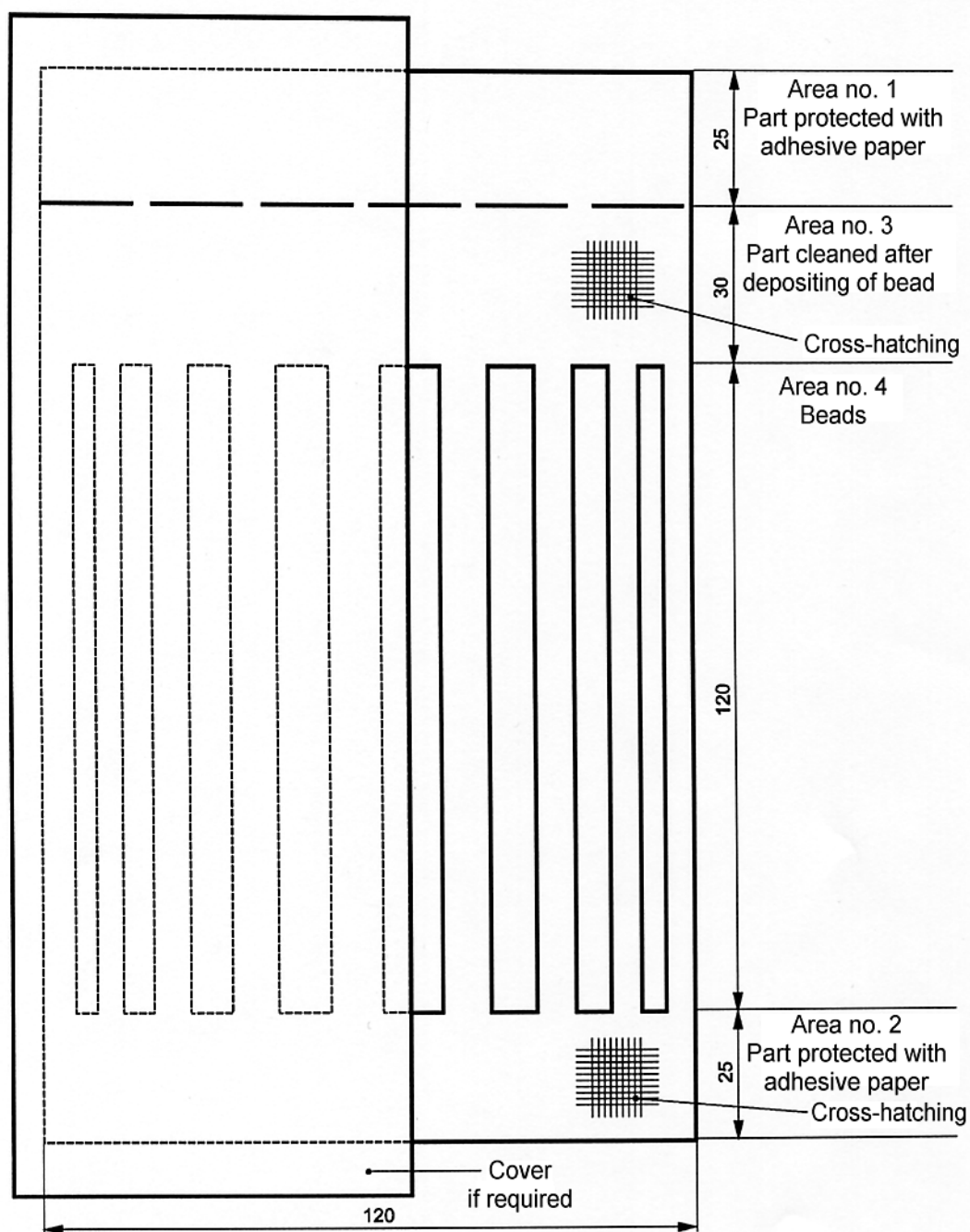
Different types of stoving are carried out according to the documents.

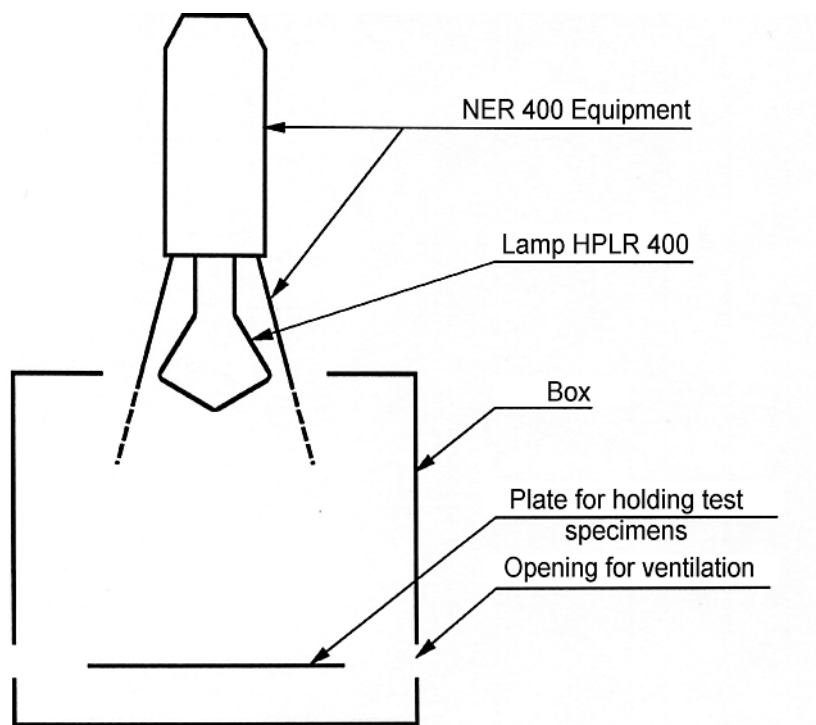
APPENDIX 2

CORDOGRAPH



APPENDIX 3



APPENDIX 4 (1/2)**DIAGRAM OF ASSEMBLY OF HPLR 400 LAMP****EQUIPMENT**

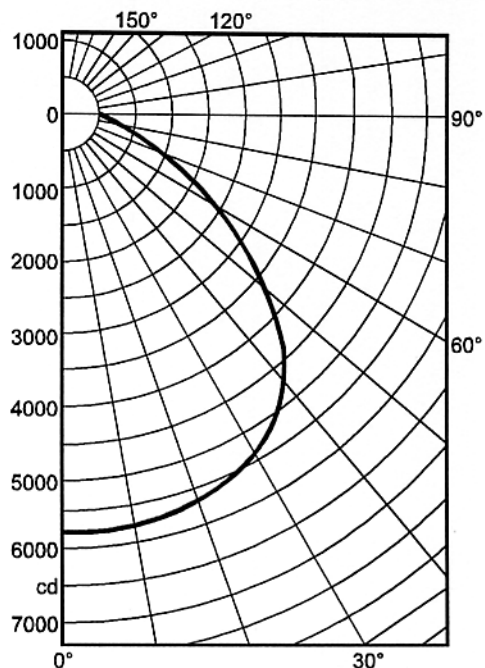
- Box and lamp support
- PHILIPS HPLR 400 lamp with NER 400 equipment (containing a standard NE400 electric unit and a R 400 screen).
- Timer

EXPOSURE CONDITIONS

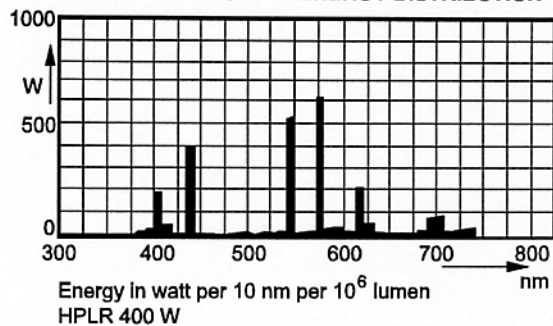
- Distance from the front of the lamp
- Area of exposure of the test specimens : horizontal radius 200 mm around the axis of the lamp.
- Ambient temperature inside the box lower than 50°C.
- Maximum period of operation of the lamp : 5 000 hours.

APPENDIX 4 (2/2)

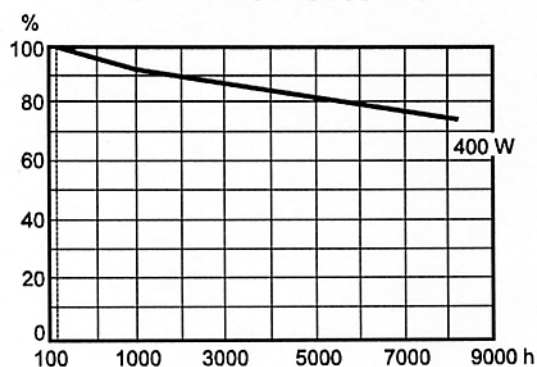
POLAR DISTRIBUTION CURVES, ABSOLUTE VALUES



ABSOLUTE SPECTRAL ENERGY DISTRIBUTION



LIGHT DEPRECIATION CURVES



MERCURY FLUORESCENT REFLECTOR LAMPS HPLR

TEMPERATURES

Max. permissible base temperature :

E40 : 250 °C

Max. permissible bulb temperature : 350 °C

BURNING POSITION

Universal

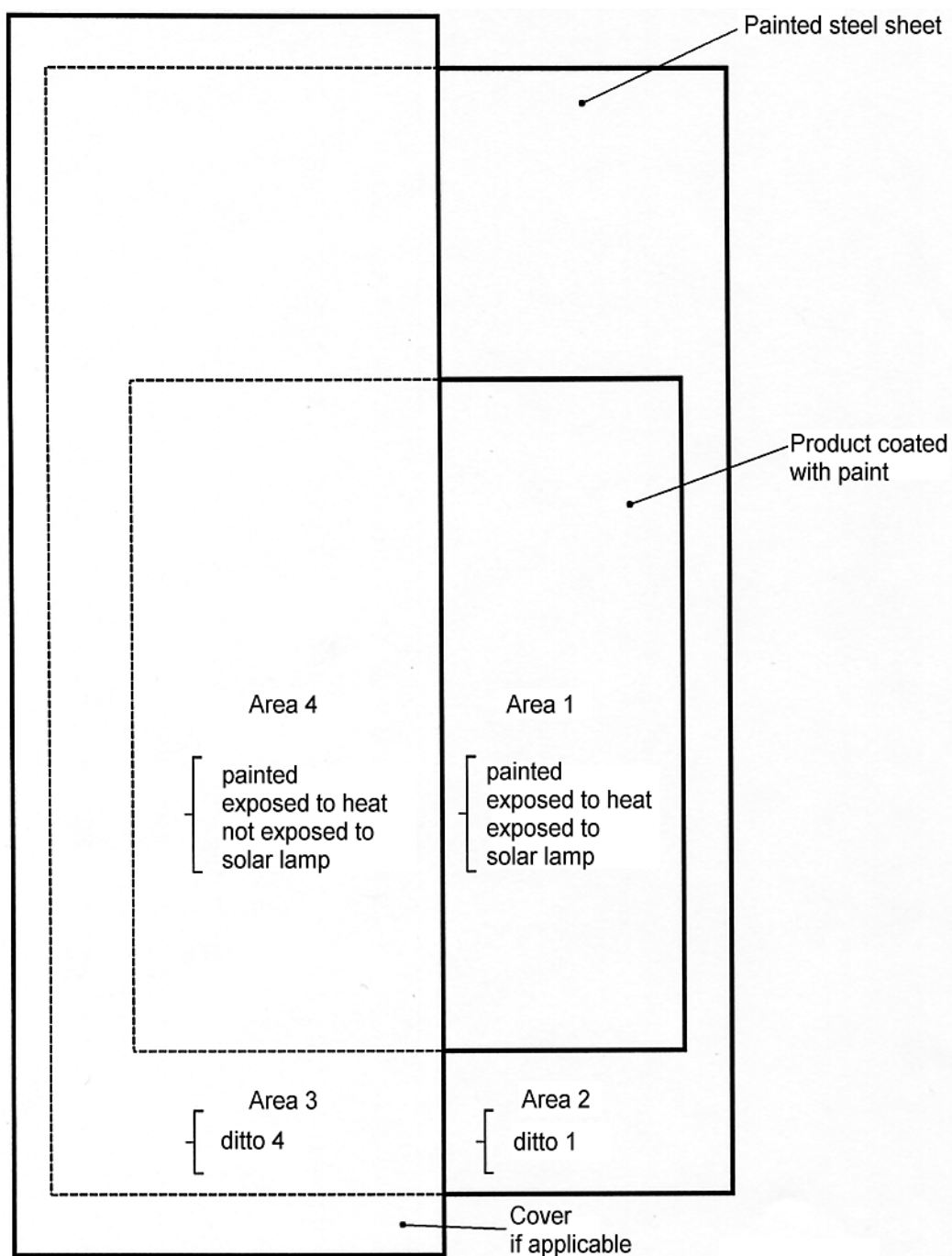
DIMENSIONS

Lamp designation	Base	A max.	B max.
HPLR 400 W	E40	300	184



APPENDIX 5

EXAMPLE OF APPLICATION OF PRODUCT IN LAYER FORM



8. RECORDS AND REFERENCE DOCUMENTS

8.1. RECORDS

8.1.1. CREATION

- OR : 01/01/1982 – CREATION OF THE NORME.

8.1.2. SUBJECT OF THE MODIFICATION

- A : 03/07/1996 – INTRODUCED INTO IDEM (*French only*).
- B : 05/12/1997 – CORRECTION TO THE INTRODUCTION INTO IDEM.

8.2. REFERENCE DOCUMENTS

8.2.1. PSA DOCUMENTS

8.2.1.1 Normes

D25 1075, D59 1160, D59 1170, D59 1509

8.2.1.2. Others

8.2.2. EXTERNAL DOCUMENTS

8.3. EQUIVALENT TO :

REN1101

8.4. CONFORMS TO :

8.5. KEY-WORDS