European Pallet Association e.V.

Technical Regulations

(EPAL TR)

Section 2 – Part 17

EPAL CP7 pallets

Production, repair and marking

A Foreword

I Scope and validity

The specifications of Section 2, Part 17 of the EPAL Technical Regulations apply to the production, repair and marking of wooden pallets with the dimensions 1,300 x 1,100 x 156 mm.

II. Designation

The pallets are designated as EPAL CP7 pallets.

III Description

EPAL CP7 pallets are four-way flat pallets with outer dimensions of 1,300 x 1,100 mm.

EPAL CP7 pallets are constructed from wood (boards and blocks), wooden composite (blocks) and metal (nails).

Other materials (e.g. plastics) are not used.

IV Intended use

EPAL CP7 pallets are used as load carriers for storing and transporting all types of goods, e.g. bags, boxes, flexible intermediate bulk containers.

V Safe working load

EPAL CP7 pallets have no specified payload, as various, variable factors such as weight of the load, type of load, securing and wrapping affect it.
In bay racking or on the fork of an industrial truck the pallet has the greatest degree of stress.
The approved payload in a defined process can be determined according to the individual burden.

This process for EPAL CP7 pallets is explained in:

Addendum 1:
Process for determining payload for EPAL CP7 pallets

VI Overall objectives

The quality assurance of the production and repair of EPAL CP7 pallets serves to improve conditions in the transport and warehouse logistics sector. Security of the transported and stored goods, smooth flow of logistics processes, trouble-free functioning of automated facilities and guaranteed occupational health and safety form the basis of and benchmark for the subsequent quality requirements.
The fitness for exchange of EPAL CP7 pallets will be guaranteed by their high quality – assured by regular, independent quality inspections – as certified by the “EPAL in oval” mark.

B EPAL CP7 pallet specifications

I Dimensions

The dimensions of the EPAL CP7 pallet are as follows:

1	Main dimension - length:	1,300 mm (+3/-3)
2	Main dimension – width:	1,100 mm (+3/-3)
3	Main dimension – height:	156 mm (+8/-2)
4	Height of entry 1,100 mm side:	98 mm (+4/-2)
5	Height of entry 1,300 mm side:	98 mm (+4/-2)
6	Distance to central bottom deck board:	max. 653 mm
7	Distance to central stringer:	max. 543 mm
8	Distances to intermediate deck boards:	max. 46 mm

The dimensions of the EPAL CP7 pallet are shown in:

Addendum 2:

Drawing and dimensions of the EPAL CP7 pallet

II Appearance

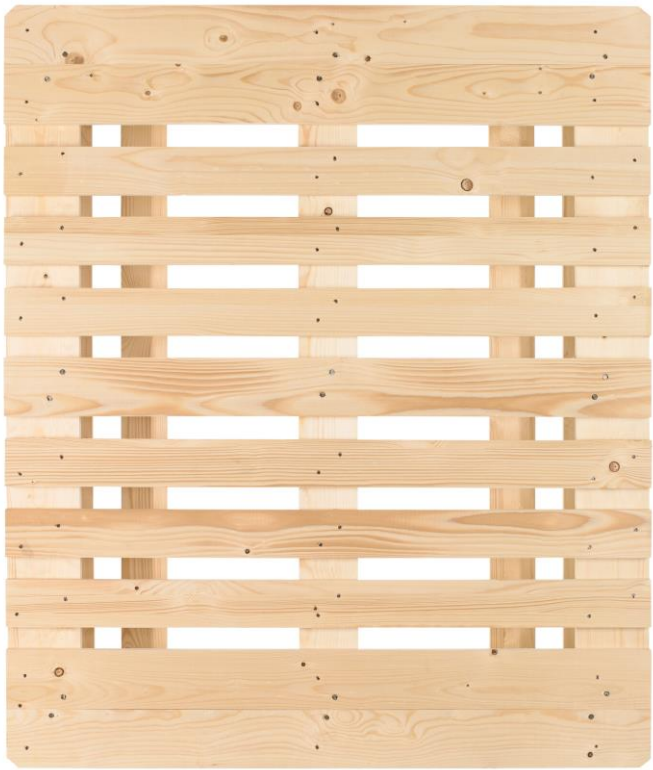
The EPAL CP7 pallet has the following appearance:

1 Isometric view

2 Short side (1,100 mm)

3 Long side (1,300 mm)

4 Top view



5 Bottom view

C Materials

The EPAL CP7 pallet materials are the permitted and standardised components of the EPAL CP7 pallet.

I EPAL CP7 pallet components

EPAL CP7 pallet components are:

1 Boards

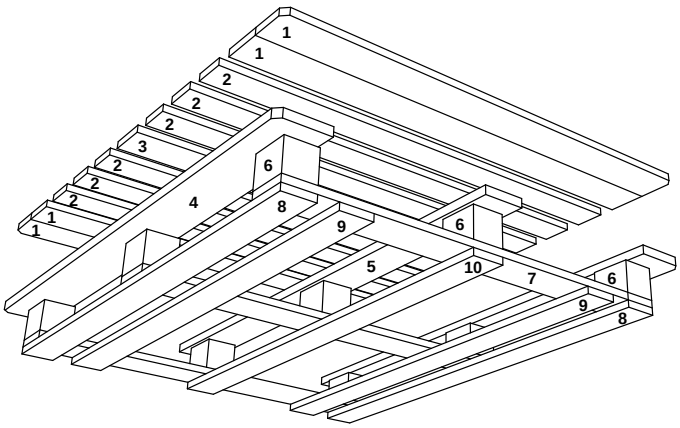
1.1	Outer deck boards:	4 units
1.2	Intermediate deck boards:	6 units
1.3	Central deck board:	1 unit
1.4	Outer stringers:	2 units
1.5	Central stringer:	1 unit
1.6	Bottom stringers:	3 units
1.7	Outer bottom boards:	2 units
1.8	Intermediate bottom boards:	2 units
1.9	Central bottom board:	1 unit

2 Blocks

2.1	Blocks (outer legs and central leg):	9 units

3 Nails

3.1	For joining deck board, stringer and block:	18 units (N1)
3.2	For joining outer deck board and stringer:	12 units (N2)
	Alternative repair – For joining outer deck board and stringer:	12 units (N4)
	For joining intermediate deck board and stringer:	36 units (N2)
	Alternative repair – For joining intermediate deck board and stringer:	36 units (N4)
	For joining central bottom board and bottom stringer:	12 units (N2)
	Alternative repair – For joining central bottom board and bottom stringer:	12 units (N4)
3.3	For joining bottom board, bottom stringer and block:	18 units (N1)
	Alternative connection between bottom board, bottom stringer and block:	36 units (N3)



1	Outer deck board
2	Intermediate deck board
3	Central deck board
4	Outer stringer
5	Central stringer
6	Block
7	Bottom stringer
8	Outer bottom board
9	Inner bottom board
10	Central bottom board

All EPAL CP7 pallet components and nails and their dimensions (including tolerances) are set out in:

Addenda 3a and 3b:
Lists of EPAL CP7 pallet components and nails

II Boards

The following dimensions and quality requirements apply to EPAL CP7 pallet boards:

1 Board dimensions

New boards with the dimensions given below must be used for the production of EPAL CP7 pallets. The production tolerances take the natural properties of the wooden material into account, as it will shrink during drying.

1.1 Outer deck boards

1.1.1	Quantity:	4	
1.1.2	Nominal dimensions (mm):		1,100 x 100 x 18 (L/W/D)
1.1.3	Tolerances (mm):	Length:	+3/-3
		Width:	+2/-2
		Thickness:	+2/-1

1.2 Intermediate deck boards

1.2.1	Quantity:	6	
1.2.2	Nominal dimensions (mm):		1,100 x 80 x 18 (L/W/D)
1.2.3	Tolerances (mm):	Length:	+3/-3
		Width:	+2/-2
		Thickness:	+2/-1

1.3 Central deck board

1.3.1	Quantity:	1	
1.3.2	Nominal dimensions (mm):		1,000 x 100 x 18 (L/W/D)
1.3.3	Tolerances (mm):	Length:	+3/-3
		Width:	+2/-2
		Thickness:	+2/-1

1.4 Outer stringers

1.4.1	Quantity:	2	
1.4.2	Nominal dimensions (mm):		1,300 x 125 x 22 (L/W/D)
1.4.3	Tolerances (mm):	Length:	+3/-3
		Width:	+2/-2
		Thickness:	+2/-0

1.5 Central stringer

1.5.1	Quantity:	1	
1.5.2	Nominal di.mensions (mm):		1,300 x 100 x 22 (L/W/D)
1.5.3	Tolerances (mm):	Length:	+3/-3
		Width:	+2/-2
		Thickness:	+2/-0

1.6 Bottom stringers

1.6.1	Quantity:	3	
1.6.2	Nominal dimensions (mm):		1,000 x 100 x 18 (L/W/D)
1.6.3	Tolerances (mm):	Length:	+3/-3
		Width:	+2/-2
		Thickness:	+2/-1

1.7 Outer bottom boards

1.7.1	Quantity:	2	
1.7.2	Nominal dimensions (mm):		1,200 x 80 x 18 (L/W/D)
1.7.3	Tolerances (mm):	Length:	+3/-3
		Width:	+2/-2
		Thickness:	+2/-1

1.8 Inner bottom boards

1.8.1	Quantity:	2	
1.8.2	Nominal dimensions (mm):		1,200 x 80 x 18 (L/W/D)
1.8.3	Tolerances (mm):	Length:	+3/-3
		Width:	+2/-2
		Thickness:	+2/-1

1.9 Central bottom board

1.9.1	Quantity:	1	
1.9.2	Nominal dimensions (mm):		1,200 x 80 x 18 (L/W/D)
1.9.3	Tolerances (mm):	Length:	+3/-3
		Width:	+2/-2
		Thickness:	+2/-1

2 Species of wood

Boards of the following species of wood only may be used to produce EPAL CP7 pallets:

2.1 **Coniferous wood:** Douglas fir, silver fir, European fir, spruce, pine, common pine, larch, hemlock spruce

2.2 **Hardwood:** Alder, birch, poplar, aspen, oak, ash, beech, elm, acacia, sycamore, plane, sweet and horse chestnut

Poplar, aspen and alder wood must not be used for stringers.

The permitted species of wood are listed in:

Addendum 4:
Species of wood permitted for EPAL CP7 pallets boards and solid wood blocks

Other species of wood may be permitted on request.
Prerequisite for the approval is that the other species of wood exhibits comparable mechanical properties to those of the approved species of wood. The structural rupture strength must be at least 42 N/mm^2, measured at a wood moisture content of 20% in accordance with ISO 13061-1:2014 (ISO 3133).
The evidence must be provided on the basis of a test carried out under the conditions stipulated in EN ISO 8611.
EPAL shall approve other species of wood by means of supplementing the Technical Regulations.

3 Wood moisture content

A maximum wood moisture content after production and possible drying is not specifically defined for EPAL CP7 pallets.
If not otherwise stipulated by the user, the pallets will be delivered undried.

The production tolerances take the natural properties of wood into account, as it will shrink during drying. The average shrinkage or swelling perpendicular (radial and tangential) to the grain direction of the wood during a change in the wood moisture content of 1% depends on the species of wood. The following woods have shrinkage values of:

- Oak, spruce, pine or fir: 0.24%
- Beech: 0.32%

If the wood moisture content is less than 30% taking the shrinkage into consideration, the differing dimensions listed in the shrinkage value table shall apply to the boards.

Addendum 5:
Shrinkage value table

4 Timber quality

All boards must comprise a single piece of wood and be cut square.
The boards on the load surface and floor surface of the pallet (upper side and underside of the pallet) must be rough (unplaned). The following are unacceptable:

- Rot (mould, fungus, dry rot, fungal attack)
- Bark and bark inclusions
- Active insect infestation

4.1 Wanes

Wanes are permitted

- on the edges of deck boards,
- if there is no bark on the edges and
- measured obliquely they do not exceed 10 mm each.

Otherwise, no wanes are permitted.

4.2 Knots

Knots are permissible without limitation when the diameter is a maximum of 10 mm.

Knots with a diameter of more than 10 mm are permissible if the knots have intergrown to a minimum of ¾ of their circumference and

- the diameter of a knot along every length of a board corresponding to the board width does not exceed 30 mm
- they are not branched knots.

4.3 Cracks

Drying cracks are permissible.

Continuous cracks and cracks which have been created during assembly are not permitted (cf. Section D.I. 1.8).

4.4 Discolourations

Blue stain is permissible as this only affects the appearance of the wood and does not adversely affect its mechanical properties.

4.5 Resin pockets

Resin pockets of up to 50 mm in length are permitted.

4.6 Insect holes

In the case of a non-active insect infestation, entrance holes (e.g. black boreholes) of up to 3 mm in diameter are permitted.

4.7 Sapwood

Sound sapwood is permitted without limitation in coniferous woods.

In deciduous woods, the sapwood must not be greater than ¼ of the board width or ½ of the board thickness.

4.8 Wood protection agents

The wood must be free of any traces of wood protection and anti-sapstain agents.

5 Chamfers / corner chamfers

The upper edges of the bottom boards can be chamfered (optional).

The corners of the pallets must be chamfered.

5.1 Chamfers of the bottom boards

The bottom boards (optionally chamfered) must have a discontinued chamfer (bevelled edges) on the upper edge of both of the long sides, whose start or end must be each 10 - 50 mm from each corner or central block edge.

The angle of the chamfer is 45° (tolerance +/- 5°) and the width (measured obliquely) is 10 mm (tolerance +2/-0 mm).

Shreds are not permitted.

5.2 Corner chamfer

The outer deck and outer bottom boards, and solid wood blocks, must have a chamfer at an angle of 45° on the corners of the pallets.

The angle of the corner chamfer is 45° (tolerance +/- 5°).

The length of the corner chamfer is, measured obliquely, 20 mm (tolerance +5/-5 mm).

6 Graphical specification

The specifications of the deck and bottom boards and the stringers are illustrated in:

Addendum 6:

EPAL CP7 pallet boards

III Blocks

The following dimensions and quality requirements apply to EPAL CP7 pallet blocks:

1 Block dimensions

New blocks with the following dimensions must be used for the production of EPAL CP7 pallets:

1.1 Blocks on the outer legs and the central leg

1.1.1	Quantity:	9
1.1.2	Nominal dimensions (mm):	100 x 80 x 80 (L/W/H)
1.1.3	Tolerances (mm):	Length: +2/-2
		Width: +2/-2
		Height: +2/-2

1.2 Corner chamfer

Production-related chamfers/rounding of the corners of 3 mm to 5 mm x 45° are permitted.

2 Block types

The blocks of the EPAL CP7 pallet are made of

- wooden material (chipboard blocks), or
- solid wood.

2.1 Chipboard blocks

2.1.1 Approved blocks

Only those chipboard blocks may be used which have been approved by EPAL (EPAL chipboard blocks) and which have been produced by a company approved by EPAL for the production of EPAL chipboard blocks.

2.1.2 Materials

The chipboard material must have a density of a minimum 600 kg/m^3 and a maximum 750 kg/m^3 in accordance with EN 323:1993: Wood-based panels; determination of density.

2.1.3 Binding agents

Only glues and additives which guarantee the permanent strength of the blocks may be used as binding agents in accordance with EN 317:1993: Determination of swelling in thickness after immersion in water and EN 1087-1:1995: Particle boards – Determination of moisture resistance – Part 1: Boil test.
If the glues or additives are likely to constitute a hazard during use or disposal, this must be indicated in the data sheet of the glue or additive manufacturer.

2.1.4 Formaldehyde emissions

Formaldehyde emissions must not exceed 0.1 ppm or 0.124 mg/m^3.
In accordance with EN 717-1:2005: Wood-based panels. Determination of formaldehyde release – Part 1: Formaldehyde emission by the chamber method.

2.1.5 Heavy metal content

The total heavy metal content per block must not exceed a value of 100 ppm.

2.1.6 Coating/sealing

The blocks must not be coated or sealed in any way.

2.1.7 Production-related cavities (centre holes)

Production-related cavities (extrusion process) are permitted.

The cavities must be arranged centrally (central axis of the block). Deviations within a tolerance of +5/-5 mm from the central axis of the block are permitted.

The cavities must not exceed the following diameter:

- Block dimensions: 100 mm x 80 mm x 80 mm (L/W/H): max. 20 mm

2.2 Solid wood blocks

Only new blocks may be used.

The blocks must comprise a single piece of wood.

Blocks comprising two or more pieces of wood are not permitted.

2.2.1 Species of wood

Solid wood blocks must only be produced from the following species of wood:

- **Coniferous wood:** Douglas fir, silver fir, European fir, spruce, pine, common pine, larch, hemlock spruce
- **Hardwood:** Alder, birch, poplar, aspen, oak, ash, beech, elm, acacia, sycamore, plane, sweet and horse chestnut

The permitted species of wood are listed in:

Addendum 4:

Species of wood permitted for EPAL CP7 pallets boards and solid wood blocks

Other species of wood may be permitted on request.

Prerequisite for the approval is that the other species of wood exhibits comparable mechanical properties to those of the approved species of wood. EPAL shall approve other species of wood by means of supplementing the Technical Regulations.

2.2.2 Grains and grain direction

The grain of the blocks must run parallel to the long side (1,300 mm) of the pallet.

2.2.3 Knots

The diameter of a knot on the visible sides of the blocks must not exceed ¼ of the height of the block.

2.2.4 Cracks

Blocks may only contain superficial dry cracks.

Continuous cracks and cracks which have been created during assembly are not permitted.

2.2.5 Heartwood

Heartwood is permissible.

2.2.6 Wood moisture content

A maximum wood moisture content after production and possible drying is not specifically defined for EPAL CP7 pallets.

2.2.7 Timber quality

Otherwise the specifications for boards stipulated in Section C.II.4 apply.

3 Graphical specification

The specifications of the EPAL CP7 pallet blocks are illustrated in:

Addendum 7:

EPAL CP7 pallet blocks

4 Marking the blocks

The blocks on the short side of the pallet must bear a mark on the outer surface which complies with Section G.I.1 (corner blocks) and Section G.I.2 (central blocks).

IV Nails

The following specifications apply to the nails of the EPAL CP7 pallet (EPAL nails):

1 Approved nails

Only those nails which have been approved by EPAL may be used to assemble the pallets.

The nails must comply with the specifications of these Technical Regulations and have been produced by a company approved by EPAL.

2 Dimensions and types

The nails of the EPAL CP7 pallets must exhibit the following dimensions and positioning:

2.1 Nail N1 for joining deck board - stringer - block and bottom board - bottom stringer - block

2.1.1	Length:	90 mm (+2/-2 mm)
2.1.2	Diameter of the nail head:	8.4 mm diameter or 55 mm^2
2.1.3	Head diameter to shank diameter ratio:	≥ 2:1
2.1.4	Type of shank:	Screw, fluted or notched
2.1.5	Tensile strength:	Minimum 700 N/mm^2
2.1.6	Type of nail point:	Diamond or chisel point
2.1.7	Wire diameter:	Minimum 3.4 mm

2.2 Nail N2 for joining deck board - stringer

(Nails which are bent over on the underside of the stringers)

2.2.1	Length:	45 mm (+2/-0 mm)
2.2.2	Diameter of the nail head:	5.5 mm diameter or 24 mm^2
2.2.3	Head diameter to shank diameter ratio:	≥ 2:1
2.2.4	Type of shank:	Screw, fluted, notched or smooth
2.2.5	Tensile strength:	Minimum 800 N/mm^2
2.2.6	Type of nail point:	Diamond or side (angled) point
2.2.7	Wire diameter:	Minimum 2.5 mm

2.3 Nail N3 for the alternative means of joining bottom board, bottom stringer and block

2.3.1	Length:	70 mm (+2/-2 mm)
2.3.2	Diameter of the nail head:	8.4 mm diameter or 55 mm^2
2.3.3	Head diameter to shank diameter ratio:	≥ 2:1
2.3.4	Type of shank:	Screw, fluted or notched
2.3.5	Tensile strength:	Minimum 650 N/mm^2
2.3.6	Type of nail point:	Diamond or chisel point
2.3.7	Wire diameter:	Minimum 3.4 mm

2.4 Nail N4 as alternative repair for joining outer deck board - stringer / central deck board - stringer / central bottom board - bottom stringer)

(Collated nails for nail guns – only admissible for repair)

2.4.1	Length:	35 mm (+2/-0 mm)
2.4.2	Diameter of the nail head:	5.5 mm diameter or 24 mm^2
2.4.3	Head diameter to shank diameter ratio:	≥ 2:1
2.4.4	Type of shank:	Fluted
2.4.5	Tensile strength:	Minimum 800 N/mm^2
2.4.6	Type of nail point:	Diamond or chisel point
2.4.7	Wire diameter	Minimum 2.0 mm

3 Nail head mark

The nails bear a mark on the nail head consisting of two letters.

The mark must comply with the specifications in Section G.I. 3.1.

D Construction, wood treatment and drying

I Construction (assembly)

Boards and blocks must be assembled according to standard to ensure the safe working load and stability of the EPAL CP7 pallets. Only those boards, blocks and nails which comply with the specifications stipulated in Section C may be used for assembly.
The construction of the boards and blocks is illustrated in:

Addendum 2:
Drawing and dimensions of the EPAL CP7 pallet

1 Joining the boards and blocks

Boards and blocks are joined by driving in the approved nails which comply with Section C.IV.
To ensure the stability and diagonal rigidity of the EPAL CP7 pallets, the nails must be driven in according to the specifications below.
The following rules apply when driving in the nails:

1.1 Vertical insertion

The nails must be driven in vertically (perpendicular to the surface of the boards).

1.2 Distance between the nails

All of the nails must be driven in so that they are the greatest possible distance from one another.

1.3 Minimum distance from the edges and the central cavity

The nails must maintain a minimum distance of 15 mm from the component (boards/blocks) edges.
If chipboard blocks with a production-related cavity (Section C.III.2.1.7) are used, the nails must maintain a minimum distance of 10 mm from the cavity.

Graphical specification

The defined minimum distances for the nails from the edges and central cavity are illustrated in:

Addendum 8:

Minimum nail distances from the edges and the central cavity

1.4 No protrusion of nail heads

The nail heads must not protrude above the surface of the board.

1.5 Insertion depth

The nail heads must not be driven in more than 3 mm below the surface of the board.

1.6 Nails must not project

The nails must not project from the side of a block or from a board.

Nails which penetrate and project from the underside of the stringer (where the inner deck boards or outer deck boards join the stringers) must be bent over.

1.7 Grain

In the area of each joint between a board and a block, several nails must not be driven into the same grain of a board.

When driving nails into blocks of solid wood, several nails must not be driven into the same grain of a block.

1.8 No assembly cracks permitted

Driving in the nails must not create any visible cracks in the boards or blocks.

1.9 No contact between nails

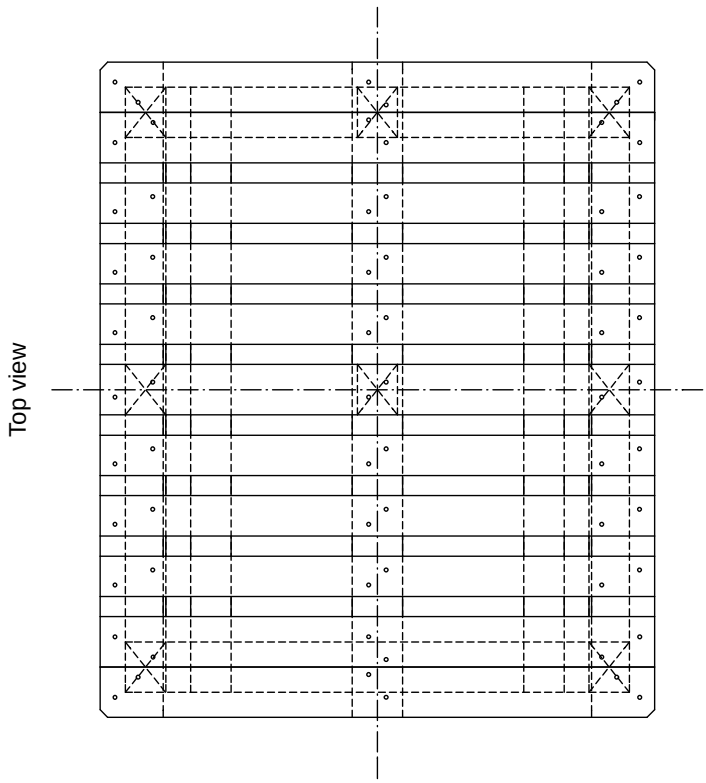
The nails driven in from the upper side and underside of the pallet must not touch one another. The nail position of the upper side of the pallet must oppose that of the underside of the pallet.

1.10 Nail positioning

In order to guarantee maximum stability (diagonal rigidity) the nails must be driven into place according to a consistent and repetitive nail position:

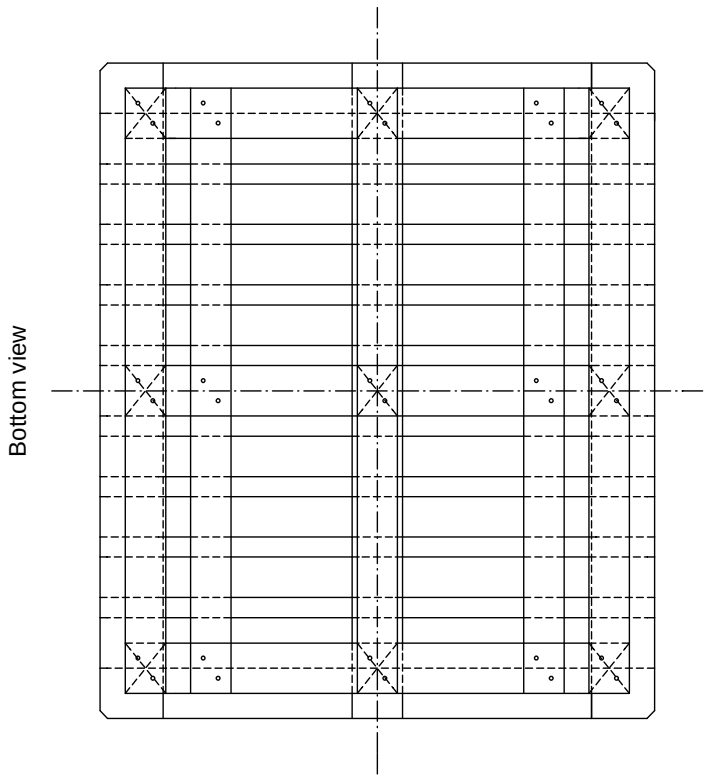
1.10.1 Upper side of the pallet

The nail positioning on the upper side of the EPAL CP7 pallet should comply with the following appearance:



1.10.2 Underside of the pallet

The nail positioning on the underside of the EPAL CP7 pallet should comply with the following appearance:



2 Assembly stability

2.1 Diagonal rigidity

New EPAL CP7 pallets may exhibit a deformation of max. 3% (distance between the measurement points before and after the corner drop test) following the corner drop test performed in accordance with EN ISO 8611-1:2012.

The corner drop test procedure is specified in Section 3 of the Technical Regulations.

2.2 Right angles

New EPAL CP7 pallets must be produced such that they are right-angled.

A maximum difference of 10 mm is permitted between the diagonals.

II Prohibition of treatment with chemical agents

The treatment of EPAL CP7 pallets or individual components of EPAL CP7 pallets with chemical agents is prohibited.

III Drying

If EPAL CP7 pallets are dried in the drying chamber (technical drying) to the specified moisture content of the wood, then this must be conducted in the drying chamber of the company which produced the EPAL CP7 pallets.

The specifications regarding heat treatment in accordance with IPPC standard ISPM 15 remain unaffected.

E Treatment of EPAL CP7 pallets in accordance with IPPC standard ISPM 15

As packaging wood, EPAL CP7 pallets and the components of EPAL CP7 pallets (boards and blocks of solid wood) are subject to the provisions of IPPC standard ISPM 15 and must be treated and marked in accordance with IPPC standard ISPM 15.

I Heat treatment in accordance with ISPM 15

EPAL CP7 pallets must be heat treated in accordance with the specifications of IPPC standard ISPM 15.
The core of the wood (boards and blocks of solid wood) must be heated for a minimum of 30 minutes at 56°C.
The fumigation of EPAL CP7 pallets with methyl bromide (bromomethane) is prohibited.
The heat treatment process must be conducted in the drying chamber of the company which produced the EPAL CP7 pallets.

II Performing the heat treatment

EPAL CP7 pallets must be heat treated immediately after production and marking.
If EPAL CP7 pallets are stored after completion of the production and marking in order to receive their ISPM 15 treatment at a later point, these pallets must be stored separately from other pallets. They must be suitably identified as not yet having received ISPM 15 treatment.
The EPAL CP7 pallets must not leave the production and storage area of the producer until they have been heat treated.

III Production from pretreated components

The production of EPAL CP7 pallets from components (boards and blocks of solid wood) that have undergone heat treatment in accordance with IPPC standard ISPM 15 is permitted.

IV Documenting the heat treatment

The performance of the heat treatment must be documented in accordance with IPPC standard ISPM 15 taking national regulations into consideration.
The documentation must be stored for a minimum of two years. Insofar as the national specifications decree a longer retention period, this shall not be affected.
This documentation must be provided to EPAL on request.

V Marking

As evidence of the heat treatment, EPAL CP7 pallets bear a branded marking in accordance with IPPC standard ISPM 15 together with the marking prescribed by national regulations and “HT” (Heat Treatment) on both left-hand corner blocks on the short sides.
The specifications in Section G.I.1 apply.

F Repair of EPAL CP7 pallets

I General specifications

1 Licence requirement

EPAL CP7 pallets may only be repaired by operations in possession of an EPAL licence (licence to use the brand EPAL as part of the repair).
This applies without restriction for all repairs which affect the stock of EPAL CP7 pallets (e.g. the exchange of boards and/or blocks) and/or which require the use of the EPAL brand in any other form (e.g. to apply or renew the EPAL branded marking or the installation of blocks with the brand EPAL on them because the EPAL CP7 pallet demonstrates considerable damage or faults). Any operations which carry out such repairs to EPAL CP7 pallets without authorisation / possession of an EPAL repair licence will be legally prosecuted by EPAL.

2 Objectives

The aim of the quality assurance of the repair of EPAL CP7 pallets is to guarantee occupational safety and the safety of goods within the context of the use of used EPAL CP7 pallets. The use of new, standardised materials as part of the repair guarantees the stability and safe working load of EPAL CP7 pallets in accordance with the specifications for new EPAL CP7 pallets.
Used EPAL CP7 pallets which have been repaired by an operation licenced by EPAL fulfil all of the requirements for use in the transportation and logistics sector.
Refurbishing EPAL CP7 pallets to make them fit once more for use and exchange avoids having to dispose of damaged pallets and protects the environment by ensuring used EPAL CP7 pallets are reused in an environmentally friendly manner.

II Need for the repair of EPAL CP7 pallets

1 Discontinuation of the fitness for exchange

If EPAL CP7 pallets are substantially damaged or faulty, they are no longer fit for exchange. EPAL CP7 pallets that are no longer fit for exchange due to substantial damage or faults must be repaired before being placed back into circulation.

2 Substantially damaged and faulty pallets

Substantial damage and faults are:

2.1 Missing components

2.1.1 One or more boards are missing in part or in full.

2.1.2 One or more blocks are missing.

2.2 Damaged components

2.2.1 One or more boards are broken crossways or at an angle.

2.2.2 One or more edge boards (outer deck or outer bottom boards) are split in such a way that more than one nail shank is visible.

2.2.3 More than two edge boards (outer deck or outer bottom boards) are split in such a way that more than one nail shank is visible on each.

2.2.4 A block split in such a way that more than one nail shank is visible.

2.2.5 One or more blocks are twisted so that one corner of the block protrudes more than 1 cm above the outer edge of the pallet.

2.3 Unacceptable components

The pallet exhibits unacceptable components, e.g.:

2.3.1 Board with incorrect dimensions

2.3.2 Blocks with incorrect dimensions

2.3.3 Boards or blocks of unapproved material

2.4 Poor general condition of the pallets

The general condition of the pallet is so poor that the safe working load or stability of the pallet is obviously no longer guaranteed:

2.4.1 Rotten or decayed boards or blocks

2.4.2 Several split boards or blocks

2.4.3 The pallet is contaminated in such a way (e.g. paints or oils, dirt and dust, odours, product residues) that this may lead to the contamination of the payload.

2.5 Missing marking

The marking on the pallet is incomplete:

2.5.1 The EPAL branded marking does not exist or is not recognisable on any of the right-hand corner blocks on either of the short sides of the pallet.

2.5.2 None of the central blocks on the short side of the pallet bear a control staple with the EPAL mark or a repair control nail with the EPAL mark.

3 Graphical specification

All of the forms of damage or faults which may render used EPAL CP7 pallets no longer fit for use or exchange are set out in:

Addendum 9:
Discontinuation of the fitness for exchange of EPAL CP7 pallets
due to substantial damage or faults

III Repairing EPAL CP7 pallets

Repairs to correct EPAL CP7 pallets with substantial damage or faults in accordance with Section F.II.2 may only be carried out by operations in possession of an EPAL licence and which are subject to continual quality assurance by EPAL.

1 Materials

Repairs to EPAL CP7 pallets may only be carried out using new materials. The use of used materials is not permitted.

The applicable quality and dimensions of the materials can be found in the specifications for the production of EPAL CP7 pallets in Section C.

2 Repair

2.1 Scope of the repair

Within the scope of the repair to the EPAL CP7 pallet, all of the substantial faults or damage must be rectified. A used EPAL CP7 pallet must not exhibit any substantial faults or other damage after the repair which alone or in combination with other faults or damage contribute to the pallet being unfit for exchange.

2.2 Carrying out the repair

The specifications for the design and construction of EPAL CP7 pallets in Section D apply.

2.3 Nail positioning

The nail positions of the repaired pallet must comply with the nail positions of a new pallet.
Driving in additional nails is permitted.

2.4 Dimensions

Repaired EPAL CP7 pallets must comply with the specifications for the dimensions of new EPAL CP7 pallets.

2.5 IPPC standard ISPM 15

The national specifications for the repair of packaging wood with the marking according to IPPC standard ISPM 15 must be complied with.

G Marking EPAL CP7 pallets

The following specifications apply to the marking of EPAL CP7 pallets:

I Production

EPAL CP7 pallets are to be marked fully with all marking components during production.
Components of the marking of new EPAL CP7 pallets are:

- Corner block branded marking left: IPPC
- Central block branded marking: CP type (CP7) and EPAL ID number
- EPAL control staple (in central block)
- Head marking of the EPAL nails
- Corner block branded marking right: “EPAL in oval”

1 Corner blocks

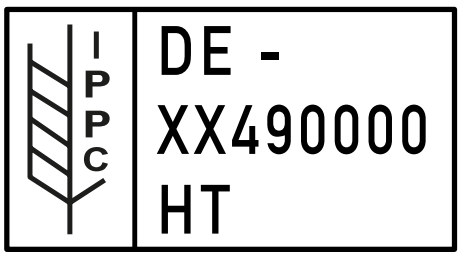
1.1 Left-hand corner block: IPPC branded marking

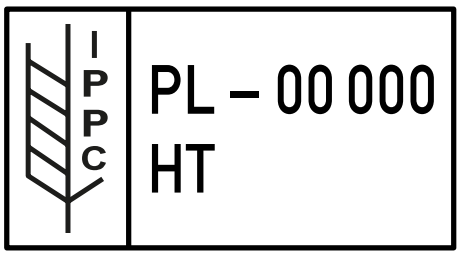
EPAL CP7 pallets bear the IPPC branded marking on the outer face of the left-hand corner blocks on the short side.

1.2 IPPC/ISPM 15 branded marking

The IPPC/ISPM 15 branded marking is to be applied – in accordance with the respective valid specifications of the IPPC standard ISPM 15 and their national transpositions – on the left-hand corner block.

Examples:





It contains the following elements:

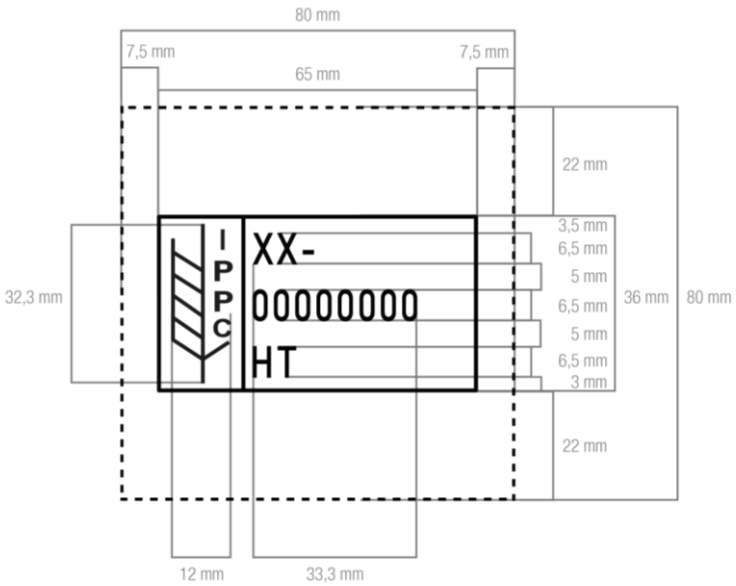
- Left column: IPPC logo
- Right column, 2 or 3 lines: Country/region/district
  IPPC permit number of the handler/producer
  Letters "HT" (Heat Treatment)

Due to national regulations governing the IPPC marking, the information provided may appear in a different order, but it must always comply with the national IPPC requirements.

1.3 Dimensions of the IPPC branded marking

The branded markings on the left-hand corner blocks must exhibit the following dimensions:

Example:



1.4 Appearance

The appearance of the left-hand corner blocks with the “IPPC" branded marking must comply with the following images:

1.5 Marking

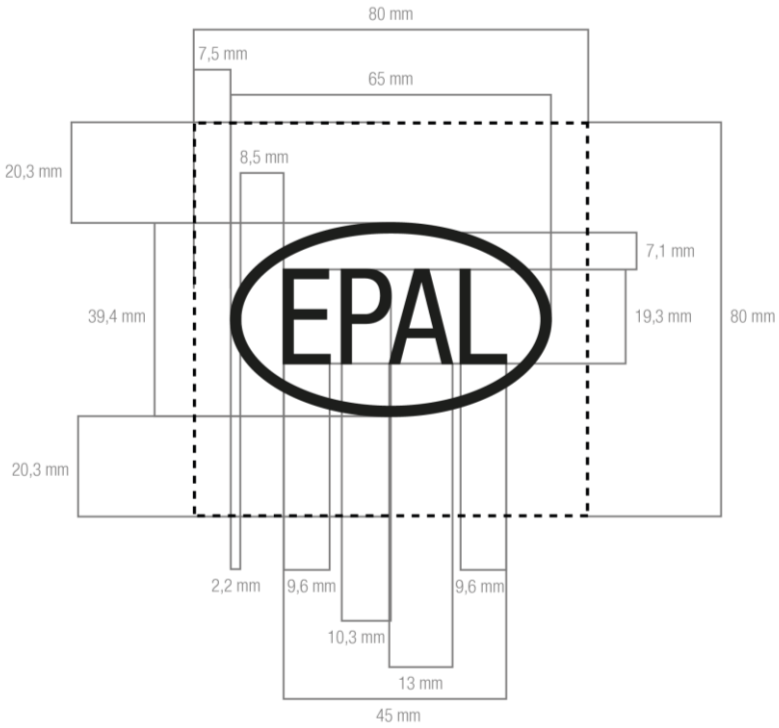
The left-hand corner blocks are marked during the production of the EPAL CP7 pallets with the IPPC branded marking.

1.6 Right-hand corner block: "EPAL in oval" branded marking

EPAL CP7 pallets bear the "EPAL in oval" branded marking on the outer face of the right-hand corner blocks on the short side:

1.7 Dimensions of the "EPAL in oval" branded marking

The branded markings on the right-hand corner blocks must exhibit the following dimensions:



The line thickness may differ slightly depending on the branding duration and the condition of the branding plate.

1.8 Appearance

The appearance of the right-hand corner blocks with the “EPAL in oval” branded marking must comply with the following image:

1.9 Marking

The right-hand corner blocks are marked during the production of the EPAL CP7 pallets with the “EPAL in oval” branded marking.

2 Central blocks

The central blocks on the short side of EPAL CP7 pallets bear the following marking on the outside:

2.1 CP7 branded marking

EPAL CP7 pallets bear the CP7 branded marking on the outer face of the short side of the central block.

2.2 EPAL ID number branded marking

Below the CP7 marking, the 6-digit EPAL ID number is branded on the pallet in three blocks, separated by two dashes.

Example:

095-8-01

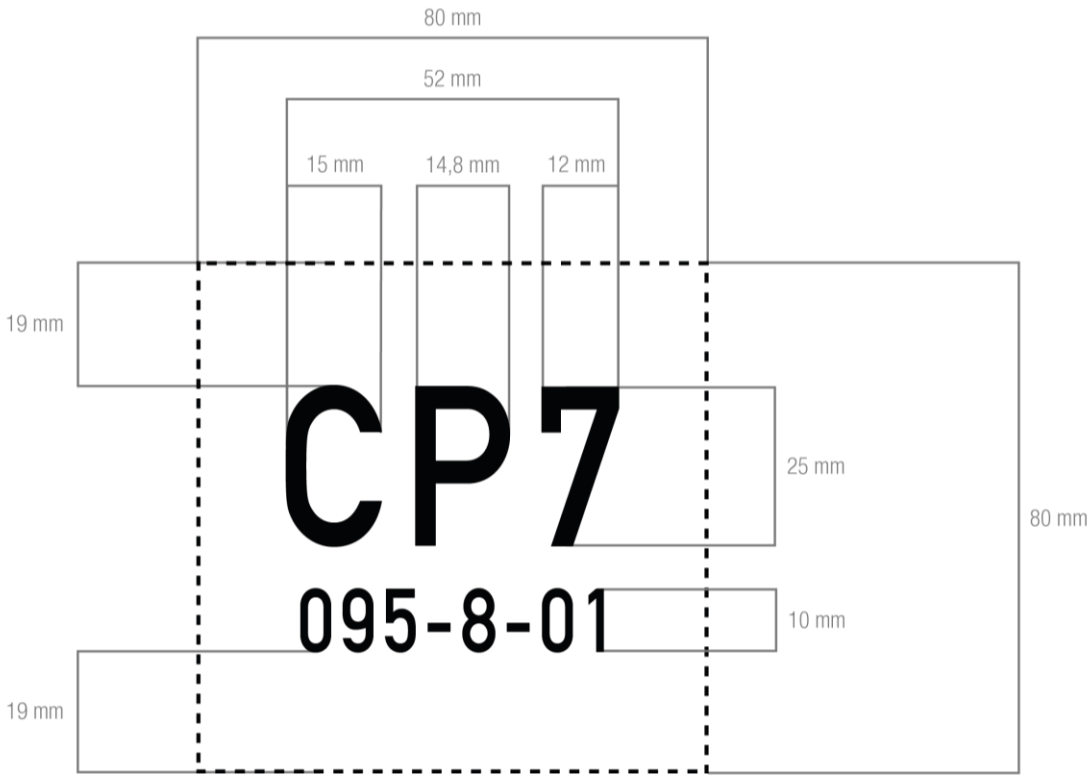
The ID number contains the following elements:

- Left-hand block of numbers (3 digits): Licence number of the producer
- Central number (1 digit): Year of production (e.g. 7 = 2017)
- Right-hand block of numbers (2 digits): Month of production (e.g. 11 = November)

2.3 Dimensions

The branded markings of the central block must exhibit the following dimensions:

Example:



2.4 EPAL control staple

As verification of the independent quality assurance, EPAL CP7 pallets bear a forgery-proof metal control staple on the outer face of the central block on one of the two short sides, embossed with the "EPAL in oval" symbol (EPAL control staple).

EPAL-licenced producers which are entitled to self-monitor (level 1) must mark the new EPAL CP7 pallets with black EPAL control staples following acceptance by the EPAL inspection company:

EPAL-licenced producers which are entitled to self-monitor (level 2) must mark the new EPAL CP7 pallets with violet EPAL control staples:

2.5 Appearance

The appearance of the central block with the CP7 branded marking, the ID marking and the EPAL control staple must comply with the following image:

Example:

2.6 Marking

The central blocks are marked during the production of EPAL CP7 pallets with the CP7 and the EPAL ID number branded markings and the driving in of a control staple.

Pallets which do not bear the complete marking with the “EPAL in oval” branded marking on the right-hand corner block must not be marked with the EPAL ID number or EPAL control staple on the central block.

3 Nails

As a further mark of identification, EPAL CP7 pallets are fitted with nails with marked heads, which are driven in according to a regular, repetitive nail position.

3.1 Head marking

The heads of EPAL nails bear an embossed or stamped code comprising two letters.

Example:

3.2 Nail positioning

The nail positioning on EPAL CP7 pallets must appear as illustrated in Section D.I.1.10.

II Repair

The following specifications apply to the marking of EPAL CP7 pallets during their repair:

1 EPAL repair control nails

Repaired EPAL CP7 pallets bear the EPAL repair control nail on the outer face of the central block of one of the two short sides as evidence of the independent quality assurance of the repair.

1.1 Appearance

The nail head of the EPAL repair control nail is embossed or stamped with:

- the “EPAL in oval” mark
- the country identifier of the repair operation (above the EPAL mark)
- the licence number of the repair operation (below the EPAL mark)

and the nail head appears as follows:

1.2 Procuring EPAL repair control nails

EPAL repair control nails may only be procured from commercial operations which have an EPAL licence for the manufacture and supply of EPAL repair control nails. Transferring EPAL repair control nails to third parties, even to other EPAL licensees, is not permitted.

1.3 Marking

Driving the EPAL repair control nail into the central block must be the very last work step in the repair process before the EPAL CP7 pallet leaves the repair workstation. The temporary storage of EPAL CP7 pallets which have already been repaired but not marked with the EPAL repair control nail is not permitted.

Wooden pallets which are not EPAL pallets must not be marked with the EPAL repair control nail.

For the first repair of an EPAL CP7 pallet, the EPAL repair control nail is to be driven in on the left half of the central block. For additional repairs of the same EPAL CP7 pallet, each EPAL repair control nail is to be driven in to the immediate right of the last EPAL repair control nail on the right hand side. The distance between two EPAL repair control nails must not be any greater than the diameter of the nail head of an EPAL repair control nail.

2 Repair dot

If a corner block is missing, or if it is necessary to replace the corner block due to damage, then the newly fitted block will be marked with the “EPAL in oval” mark and a repair dot. This also applies if the replaced corner block bore alternative marking.

The corner block fitted as part of the repair will have the following appearance:

If the “EPAL in oval” branded marking is illegible or only partly visible, the “EPAL in oval” branded marking must be renewed and supplemented with the repair dot.

3 Replacing the central block

If the central block on the short side is missing, or if it is necessary to replace the central block due to damage, then a new central block with the CP7 branded marking only is fitted (that is, no EPAL ID number branded marking).

III Invalidating damaged EPAL CP7 pallets

EPAL CP7 pallets that are unfit for exchange due to substantial damage or faults in accordance with Section F.II.2 and which it is not possible to repair in accordance with Section F.III due to technical or economic reasons, must be invalidated.

EPAL CP7 pallets may be invalidated by shredding the pallets, sawing up the pallets or removing the EPAL marking.

1 Shredding pallets

EPAL CP7 pallets are destroyed by shredding the entire pallet.

2 Sawing up pallets

EPAL CP7 pallets are destroyed by sawing through the stringers and the blocks.

3 Removing the marking

The existing EPAL branded markings on the corner blocks and the EPAL ID numbers branded on the central blocks are made permanently and completely unrecognisable using black water-insoluble paint.

Any EPAL marks branded on the central blocks must be removed in a similar manner.

Control staples and repair control nails must be removed.

IV Deviations

Deviations from the specifications governing the marking of EPAL load carriers (e.g. affixing additional markings) are only permissible in individual cases and following prior written consent from EPAL.

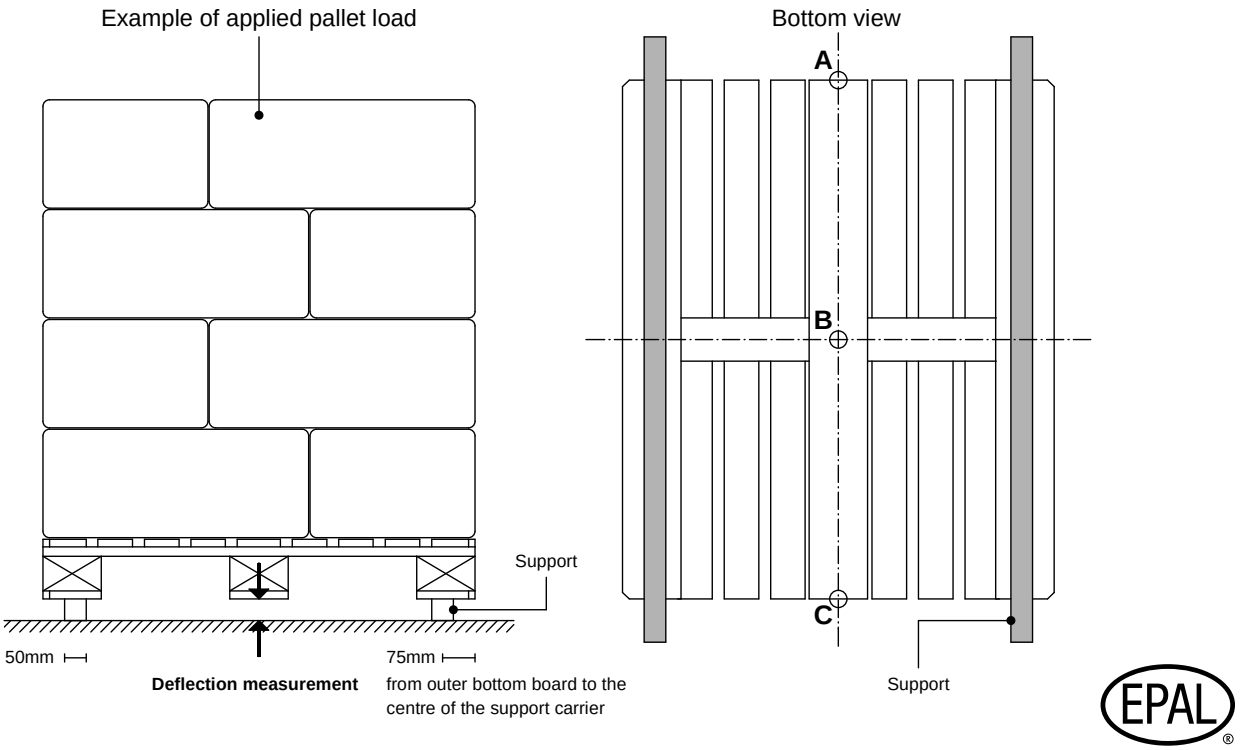
Addendum 1:

Process for determining payload for EPAL CP7 pallets

For determining the permissible payload for rack storage, the following process can be used:

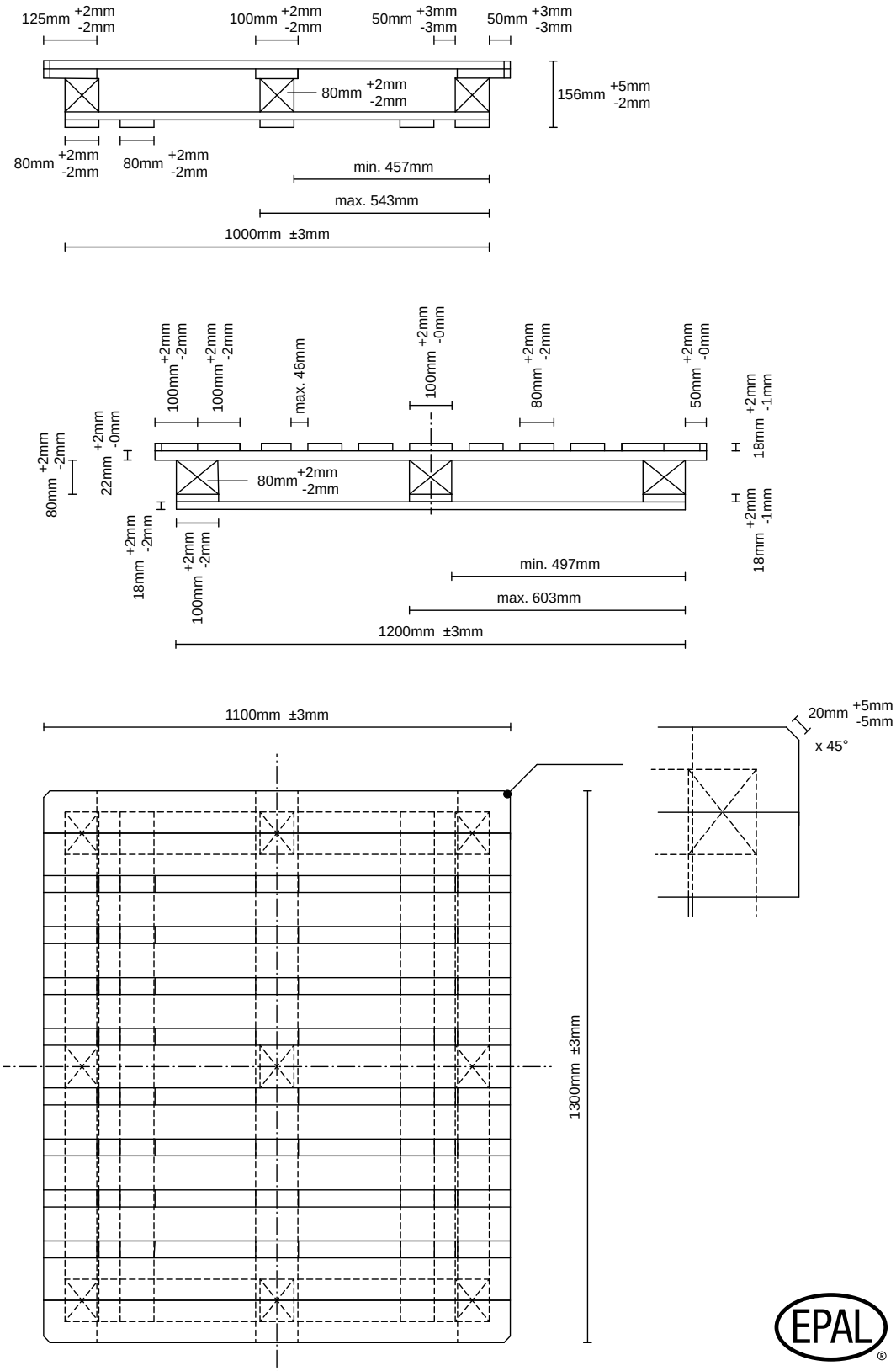
- Three EPAL CP7 pallets, of the same quality, with identical load on a uniform support, parallel to the direction of the deck boards, to be positioned according to the following images (this is the weakest direction of the pallet).
- After a test duration of 24 hours, the bend at points A, B and C shown can be measured.
- The maximum permissible bend for the EPAL CP7 pallet results from the mean value of the values determined at each of the three measurement points.
- For EPAL CP7 pallets these must be below the maximum bend of 12 mm, which is an average failure load of 10.2 kN.

The abovementioned values are determined using a bending test in accordance with ISO 8611.
The maximum bend corresponds to half of the failure load, that is a nominal load with a safety factor of two.



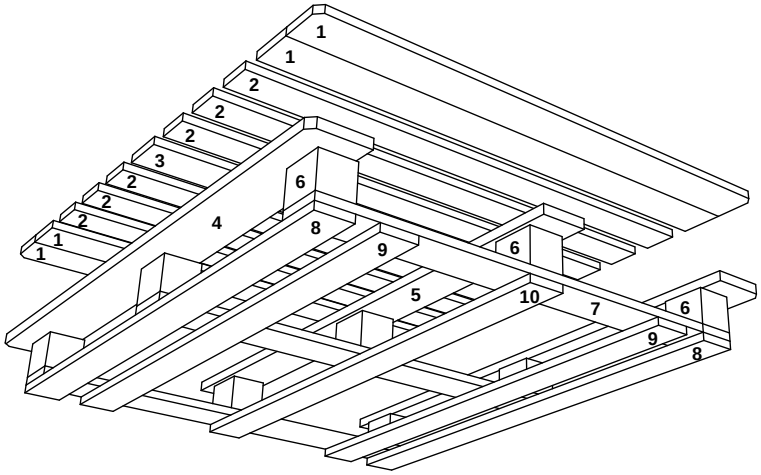
Addendum 2:

Drawing and dimensions of the EPAL CP7 pallet



Addendum 3a:

List of EPAL CP7 pallet components



Part no	Quantity	Component description	Nominal dimensions (mm) L / W / H	Tolerances in mm L	W	H
1	4	Outer deck board	1,100 x 100 x 18	+3/-3	+2/-2	+2/-1
2	6	Intermediate deck board	1,100 x 80 x 18	+3/-3	+2/-2	+2/-1
3	1	Central deck board	1,100 x 100 x 18	+3/-3	+2/-2	+2/-1
4	2	Outer stringer	1,300 x 125 x 22	+3/-3	+2/-2	+2/-0
5	1	Central stringer	1,300 x 100 x 22	+3/-3	+2/-2	+2/-0
6	9	Block	100 x 80 x 80	+2/-2	+2/-2	+2/-2
7	3	Bottom stringer	1,000 x 100 x 18	+3/-3	+2/-2	+2/-1
8	2	Outer bottom board	1,200 x 80 x 18	+3/-3	+2/-2	+2/-1
9	2	Inner bottom board	1,200 x 80 x 18	+3/-3	+2/-2	+2/-1
10	1	Central bottom board	1,200 x 80 x 18	+3/-3	+2/-2	+2/-1

Addendum 3b:

List of EPAL CP7 pallet nails

Quantity	Component description	Nominal dimensions (mm) L	Tolerances (in mm) L	
36	Nail N1	90	+2/-2	12 x 2 units for joining part 1 and parts 4 / 5 and 6 3 x 2 units for joining part 3 and parts 4 / 5 and 6 6 x 2 units for joining part 9 and parts 7 / 8 and 6 3 x 2 units for joining part 10 and parts 7 and 6
60	Nail N2	45	+2/-5	12 x 2 units for joining part 1 and part 4 / 5 18 x 2 units for joining part 2 and part 4 / 5 6 x 2 units for joining part 9 and part 7
Alternative connection between bottom board, bottom stringer and block				
36	Nail N3	70	+2/-2	9 x 2 units for joining part 7 and part 6 6 x 2 units for joining part 8 and parts 7 and 6 3 x 2 units for joining part 10 and parts 7 and 6
Alternative repair – for joining outer deck board - stringer / intermediate deck board - stringer / central bottom board - stringer (admissible only for repairs)				
60	Nail N4	35	+2/-5	12 x 1 units for joining part 1 and part 4 / 5 18 x 2 units for joining part 2 and part 4 / 5 6 x 2 units for joining part 10 and part 7 / 8

Addendum 4:

Species of wood permitted for EPAL CP7 pallets boards and solid wood blocks

Species of wood

Boards and solid wood blocks of the following species of wood only may be used to produce EPAL CP7 pallets:

- **Coniferous wood:** Douglas fir, silver fir, European fir, spruce, pine, common pine, larch, hemlock spruce
- **Hardwood:** Alder, birch, poplar, aspen, oak, ash, beech, elm, acacia, sycamore, plane, sweet and horse chestnut

Poplar, aspen and alder wood must not be used for stringers.

Addendum 5:

Shrinkage value table

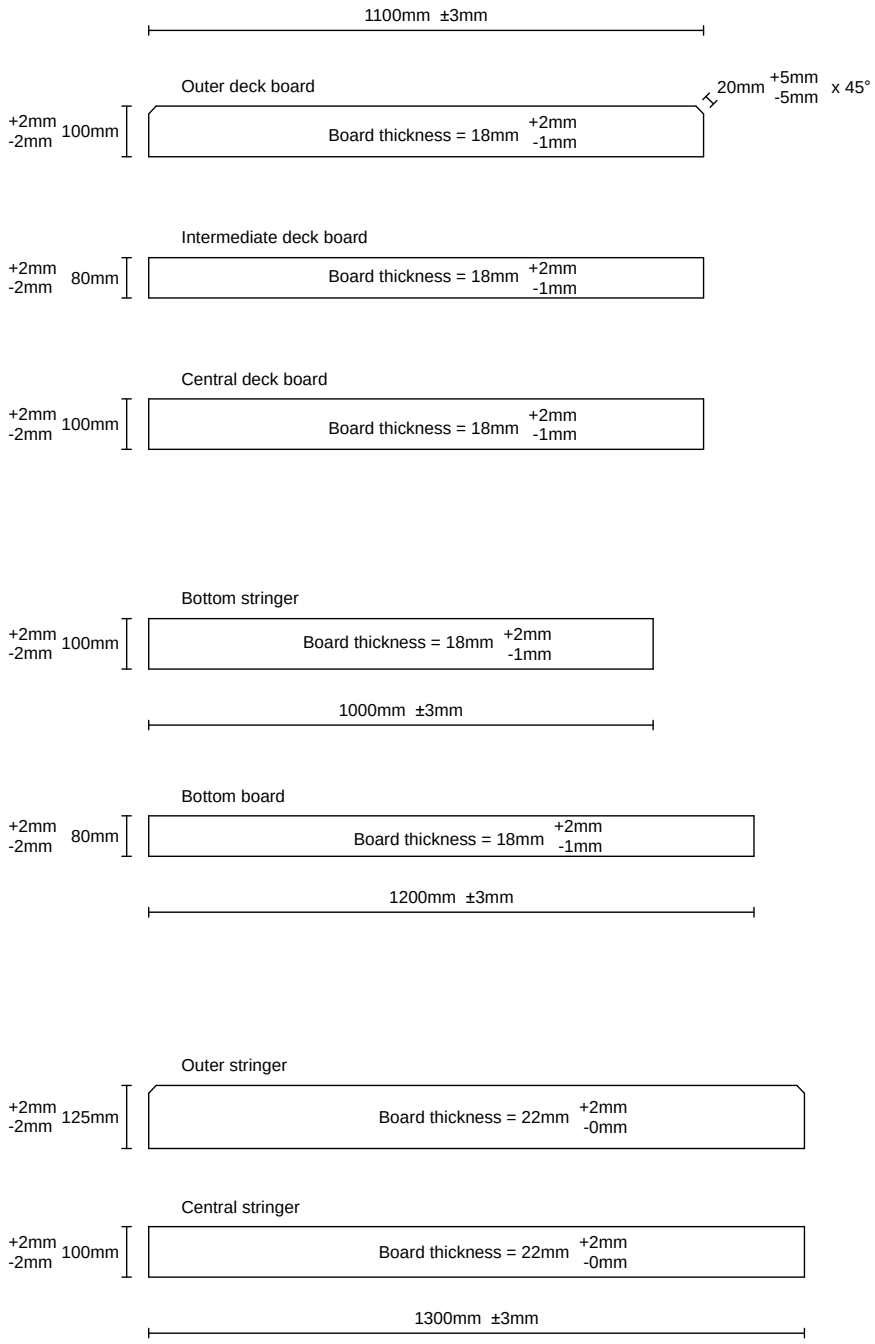
Minimum values based on the measured moisture content of the wood; reference humidity 30%.

Dimension	**Nominal dimension**	**Minimum dimension WMC <18%**
Board thickness	18 mm	16,5 mm
	22 mm	21 mm
Board width	80 mm	76 mm
	100 mm	95 mm
	135 mm	128 mm
Block height	80 mm	78 mm
Block width	80 mm	74 mm

Not meeting these values constitutes a fault.

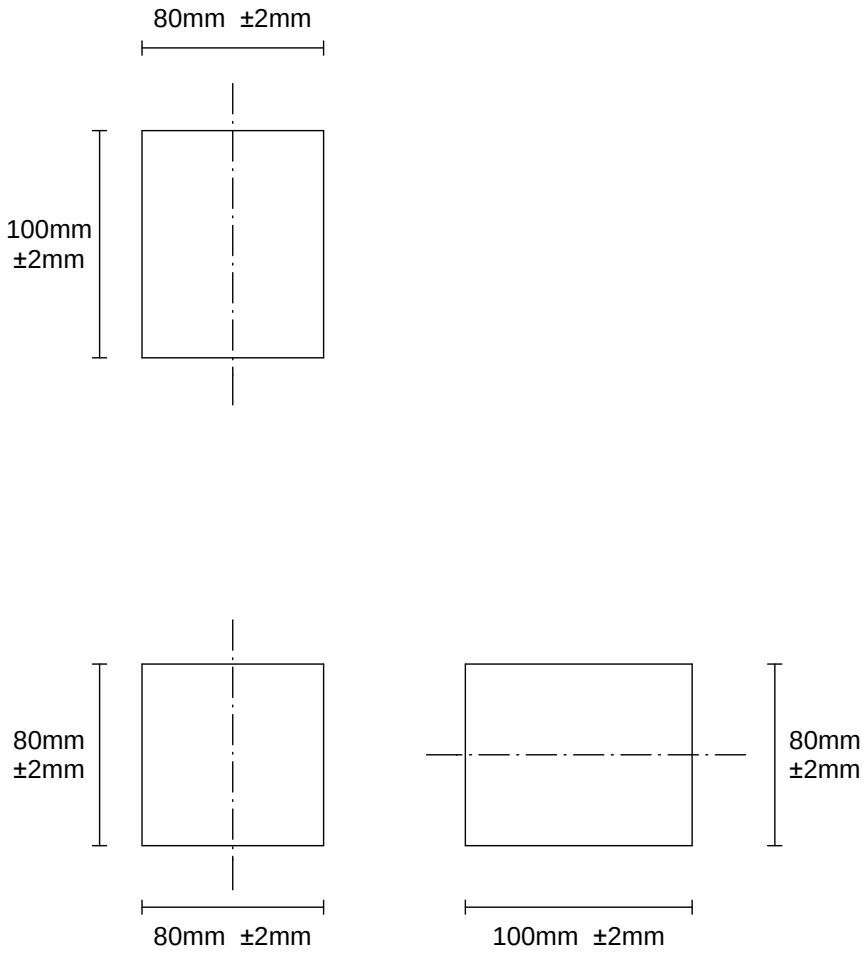
Addendum 6:

EPAL CP7 pallet boards



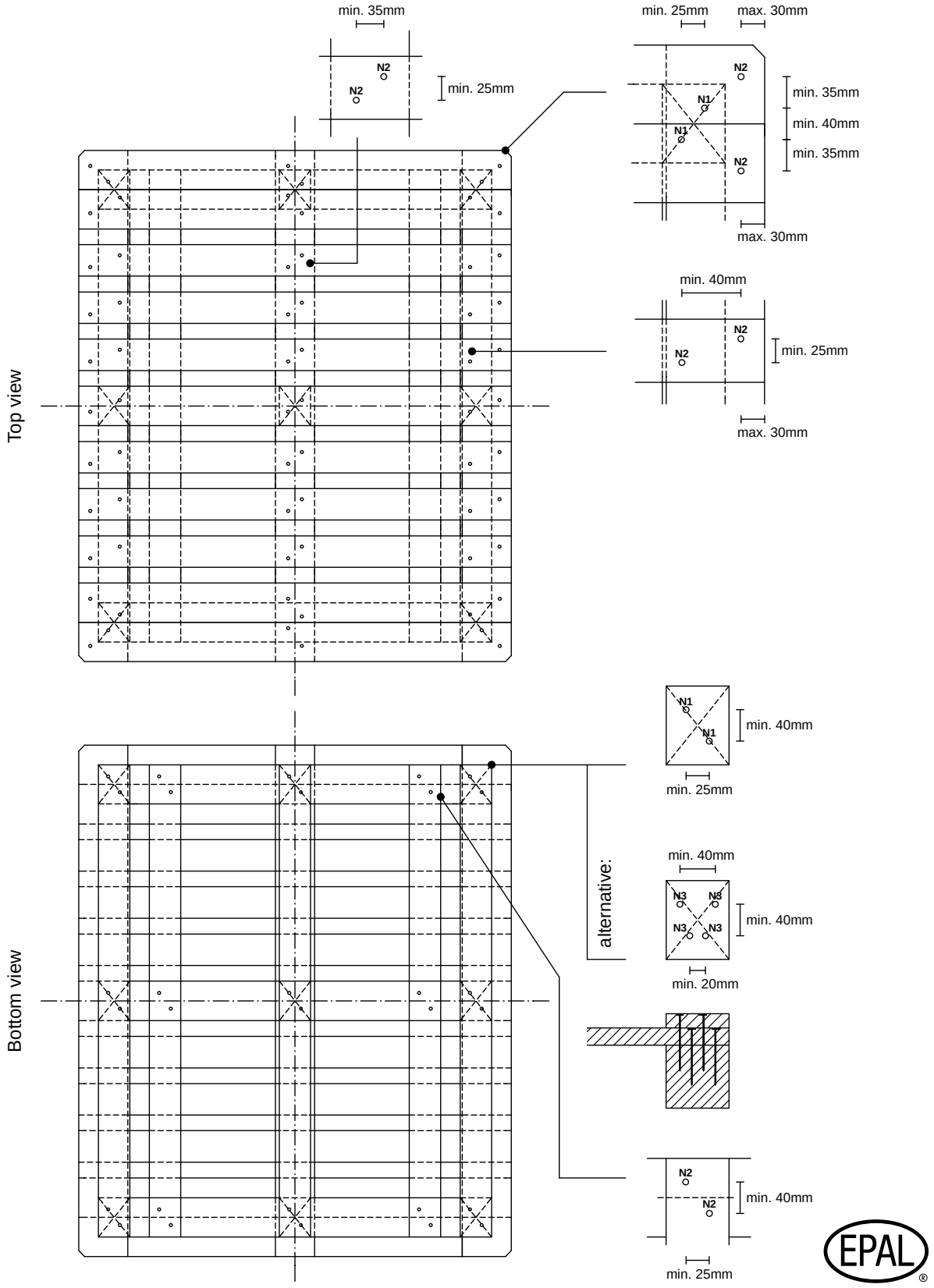
Addendum 7:

EPAL CP7 pallet blocks



Addendum 8:

Minimum nail distances from the edges and the central cavity



Addendum 9:
Discontinuation of the fitness for exchange of EPAL CP7 pallets due to substantial damage or faults

One or more boards / blocks are missing in part or in full.

Boards / blocks with incorrect dimensions or made of unapproved material.

One or more boards are broken crossways or at an angle, or split in such a way that more than one nail shank is visible.

One or more blocks are twisted so that one corner of the block protrudes more than 1 cm above the outer edge of the pallet.

One or more blocks are split in such a way that more than one nail shank is visible.

The pallet is contaminated in such a way (e.g. paints, oils, etc.), that this may lead to the contamination of the payload.

The general condition is so poor that the safe working load is obviously no longer guaranteed (e.g. rotten, decayed boards/blocks, or boards / blocks comprising several pieces).

The marking on the pallet is incomplete: the branded marking EPAL does not exist or is not recognisable on any of the corner blocks on either of the long sides of the pallet.