

This system has been developed by the "Verband der Chemischen Industrie e. V" (Germany) and the "Association of Plastics Manufacturers in Europe" in order to organize the re-use of wooden pallets by the chemical industry in Europe and is based on the use of a range of nine standard pallets to be manufactured and reconditioned by a large number of registered pallet suppliers.

Taking into account the specific needs of the chemical industry, VCI and APME specialists, assisted by an international team of pallet- and wood experts have drafted specifications for the materials, for the manufacturing and for the re-use of the nine CP types described in this document.

Special attention has been paid to quality-, security- and environmental aspects.

Requests to become a registered supplier or other correspondence can be addressed to :

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Content changes compared to the previous edition are printed in italics.
Drawings of CP 8 & 9 have been modified and are identical to edition 3.

This document has been translated into Dutch, French and German. Translations are available at APME. In case of dispute, only the English version will be valid.

1. MATERIAL SPECIFICATION

1.1. WOOD FOR BOARDS AND BLOCKS

Wood shall belong to the species mentioned in tabel 1. Related species or species from other sources of supply may also be used if the mechanical characteristics (density, bending strenght, nail withdrawal) are similar.

COMMERCIAL NAME	SOURCE OF SUPPLY	BOTANICAL NAME	BLOCK FIXATION (1)
Ash	W. & Cent. Europe	Fraxinus spp.	= or #
Beech	W. & Cent. Europe	Fagus sylvatica	= or #
Birch	N. Europe	Betula spp.	= or #
Chestnut (-Horse)	Europe	Aesculus hippocastanum	= or #
Douglas fir	Europe, Canada	Pseudotsuga spp.	#
Elm	Europe	Ulmus spp.	#
Fir	S. & Cent. Europe, Canada	Abies spp.	#
Hemlock	Alaska to N.W. USA	Tsuga spp.	#
Larch	Europe	Larix spp.	#
Oak	Europe	Quercus spp.	= or #
Pine	Europe, N. America	Pinus spp.	#
Poplar (Black Italian, Grey, White) (2)	Europe, Siberia, C. Asia	Populus canadensis, P. canescens, P. alba	#
Redwood	Russia, Scandinavia	Pinus sylvestris	#
Spruce	Europe, Siberia, Canada	Picea spp.	#

label 1

(1) see 2.2. FIXATION

(2) for deck boards and blocks only

Following requirements have to be met :

- all components constituted of one piece
- square-edged boards and blocks
- clean and healthy
- moisture content according to purchaser's specification

Are not permissible :

- wane of edge- or cross boards
- opposite branched knots
- bark
- significant slope of grain
- warped boards
- cracked blocks
- mould or rot
- borer holes
- chemical treatment

Are permissible :

- wane of the underside of inner top boards up to maximum 1/3 of the thickness
- life knots smaller than 1/3 of the board width
- dead knots and loose knots up to 10 mm
- one fissure in grain direction not longer than the board width
- surface cracks in blocks
- discolouration due to blue staining or to the wheathering
- damages of normal use (for reconditioned pallets only)

1.2. PRESSED WOOD FOR BLOCKS

Blocks made of pressed wood should meet following requirements :

- composed of wood particles without chemical treatment
- glue assuring a permanent cohesion and with a limited emission of formaldehyde < 0.1 mg/m³ air
- square consistency following DIN 68763 for V 100
- swelling after 24 h, length/width max. 2 %, height max. 4.5 %

This page replaces page 3 of edition 5 dd. 01-08-1995.

1.3. Plastic blocks

Composition

- Post consumer mixed plastics, minimal material density: 0,8 g/cm³
- Specific shares to be met (in weight-%): Polyolefins > 50
 - Paper, wood flour, alu film < 5
 - Glass, stones, metals < 0,05
- Heavy metals content in agreement with the current European regulation

Design

- Square profile, round vertical corners up to a radius of R = 5 mm allowed
- Vacuoles < 5 mm allowed; concavity, convexity of the nailing surface maximum 1 mm
- Hollow spaces and depressions shall be positioned at a minimum distance of 10 mm from the nailing line

Minimum weight

Block size (mm)	Minimum weight (g)
135 x 80 x 80	550
120 x 80 x 80	480
100 x 80 x 80	400

Table 2

Colour

- Dark grey to black

Smelling

- unpleasant smelling is not allowed

1.4. Nails and staples

Nails (plain, ring, screw, torque) and staples are permitted and shall meet the dimensions of table 3.

Positions (1) & dimensions (mm)	N1 ⁽²⁾		N2		N3 ⁽²⁾	
	Wire Ø	Length	Wire Ø	Length	Wire Ø	Length
Nails	3,5/3,35 ⁽³⁾	90	2,5	45	3,5/3,35 ⁽³⁾	70
Staples	2,5	85	1,8	45	2,5	70

Table 3

(1) See drawings on page 7 to 15

(2) No smooth nails allowed

(3) ISO Bending Resistance Class II (6,0 Nm) required at this position if reduced diameter is used (see ISO 12777: Part 1: 1994)

1.5. Dimensions and deviations (in mm)

All nominal dimensions: see drawings page 7 to 15.

Board lengths

- Deviations: +0, -3

All other deviations:

Pallets

- Length, width, height, board and block positions:
 - Deviations: ± 3 mm
 - Out of square: difference between diagonals < 10 mm

Timber dimensions mentioned in the drawings on page 7 to 15 are saw mill sizes. Considering the shrinkage due to decreasing moisture content, timber shall meet the deviations and the minimum dimensions in the table below.

Deviation	Minimum dimensions in mm at a moisture content of		
	30 %	20 - 30 %	20 %
+2, -0	18	> 17	17
+2, -0	22	> 21	21
+2, -0	36	> 34	34
+3, -0	75	> 71	71
+3, -0	80	> 76	76
+3, -0	100	> 95	95
+3, -0	120	> 114	114
+3, -0	125	> 119	119
+3, -0	135	> 128	128

Tables 4 & 5

This page replaces page 4 of edition 5 dd. 01-08-1995.

2. Manufacturing specification

2.1. Chamfer

Bottom boards can be chamfered as follows:

- Beginning of the chamfer between 10 and 20 mm from the block edge
- Angle 45°
- Height maximum $\frac{1}{2}$ of the board thickness

2.2. Fixation

General requirements:

- Positions as shown in the drawings
- Fixations cannot be driven in the same grain
- The distance from the board and block edge to a fixation shall be between 20 and 25 mm
- In each position fixations shall be staggered at a minimum distance of 20 mm in both directions
- Nails shall be overdriven between 2 and 4 mm into the wood, staples should be hammered flush
- Protruding nails or staples are not permissible
- Deck boards shall be equally spaced.

Block fixation (see also table 1):

- For wood species with (=) indication, fixation shall be driven in the same direction as the grain of the block
- For wood species with (#) indication, fixation shall be driven in the opposite direction as the grain of the block.

2.3. Marking

All markings shall be easily legible (see also block positions in the drawings).

Only following techniques are valid:

- Wooden and pressed wood blocks by hot strong burning
- Plastic blocks by hot strong burning or by hot film stamping in white
- *Reconditioning marks also by ink stamp (paint is not allowed !)*

Position A Logo of the manufacturer (facultative)

Position B

Manufacturer number

3 positions (see registration)
Height: 15 mm
At least on one side of the pallet

Position C

Reconditioner number

3 positions (see registration)
Height: 15 mm
On one block

CP type

Height: 25 mm
On both sides of the pallet

Manufacturing date

Month and last number of the year
(e.g. 074: July 1994)
Height: 15 mm
At least on one side of the pallet

Recondition date

Month and last number of the year
(e.g. 074: July 1994)
Height: 15 mm
On one block



The first reconditioning shall be marked at the top of the block, the second below the first, etc.

3. COLLECTION & RECONDITIONING OF USED PALLETS

On owner's demand, registered CP-suppliers shall offer the collection of used CP's up to at least 50 km from their facilities, respecting the lead times of tabel 6 :

NUMBER OF PALLETS	MAXIMUM LEAD TIME
400 and more	2 weeks
100 - 400	4 weeks
20 - 100	3 months

tabel 6

Quantities below 20 shall be collected provided that transport costs are paid.
Any quantity shall be accepted for free when delivered to the registered supplier.

FREE COLLECTION shall be done for all CP types, provided that the amount of damaged pallets is limited to maximum 10 % of the total quantity.

Each supplier of plastic blocks guarantees the registered CP-suppliers to take care **FREE OF COST** of the disposal of collected and no longer usable plastic blocks with the wooden parts clung to them.

Free collection has not to be organized for :

- CP's manufactured without respect of the specifications (e.g. poor board thickness, missing manufacturing markings)
- damaged pallets if the amount is higher than the 10 % earlier mentioned
- very dirty pallets or pallets with mould or rot
- pallets with chemical contamination or polluted with unknown materials

General reconditioning requirements :

- only CP's, manufactured according to the specifications shall be reconditioned
- missing or broken pieces should be replaced by specified materials, respecting the fixation requirements
- the mixing of different block materials in the same pallet is allowed
- protruding nails or staples should be eliminated
- dirt should be brushed off (traces left by normal use and coloration due to weather conditions are permissible)
- each collected CP shall be provided with reconditioning markings before delivery to customers

4. QUALITY CONTROL

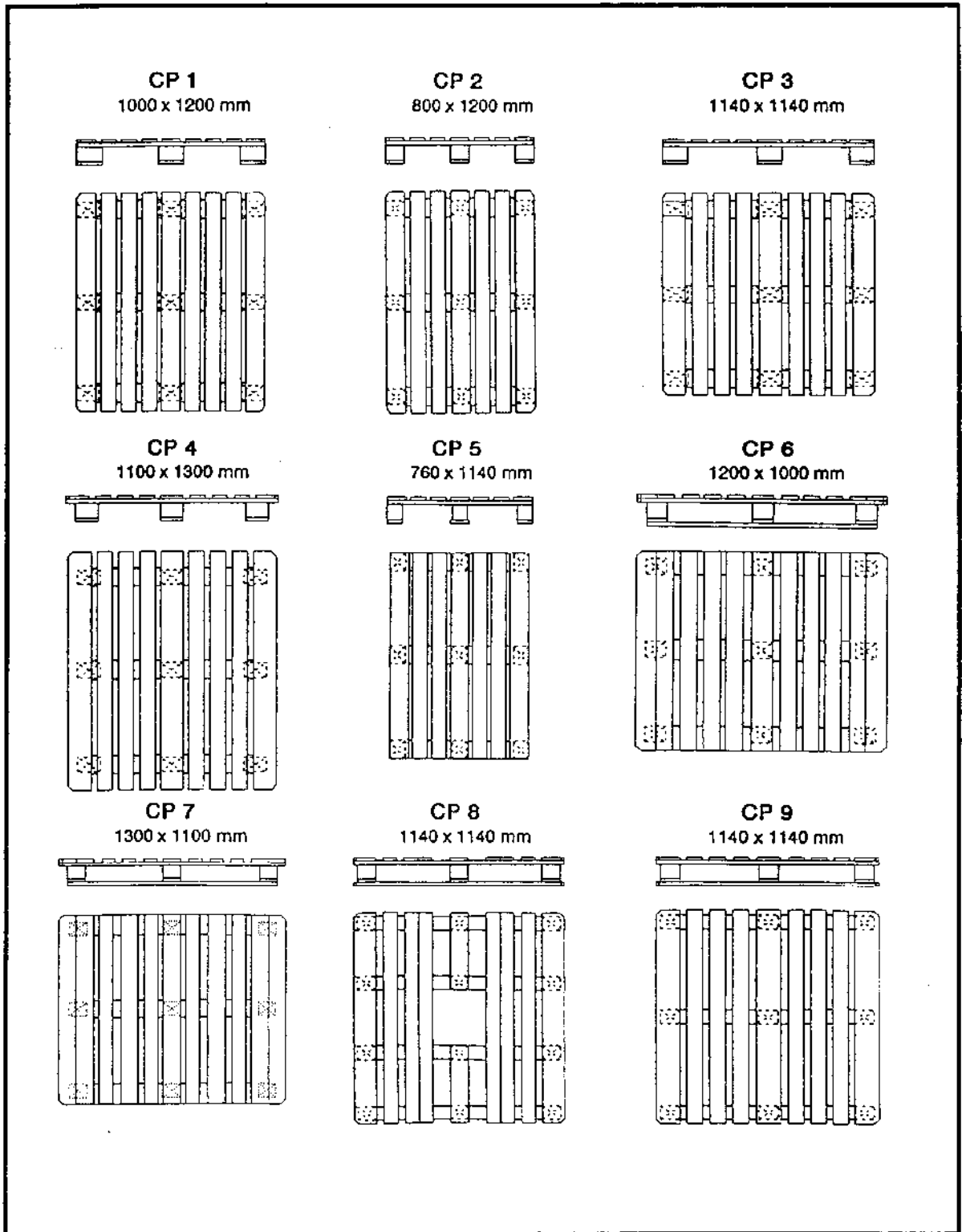
Quality shall regularly be controlled for both new and reconditioned pallets, either by the supplier or the customer.

Therefor two samples per delivery have to be checked with the help of the of the attached **QUALITY CONTROL FORM**.

If the number of non-conformances exceeds the maximum allowed, the delivery will be rejected.

5. DRAWINGS

The 9 CP-types should be manufactured and reconditioned according the drawings on next pages.

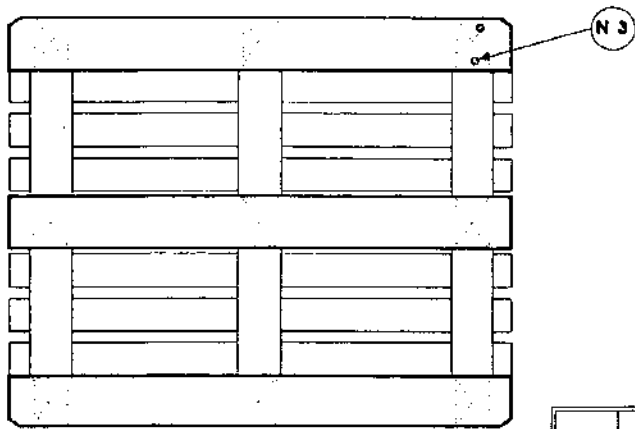
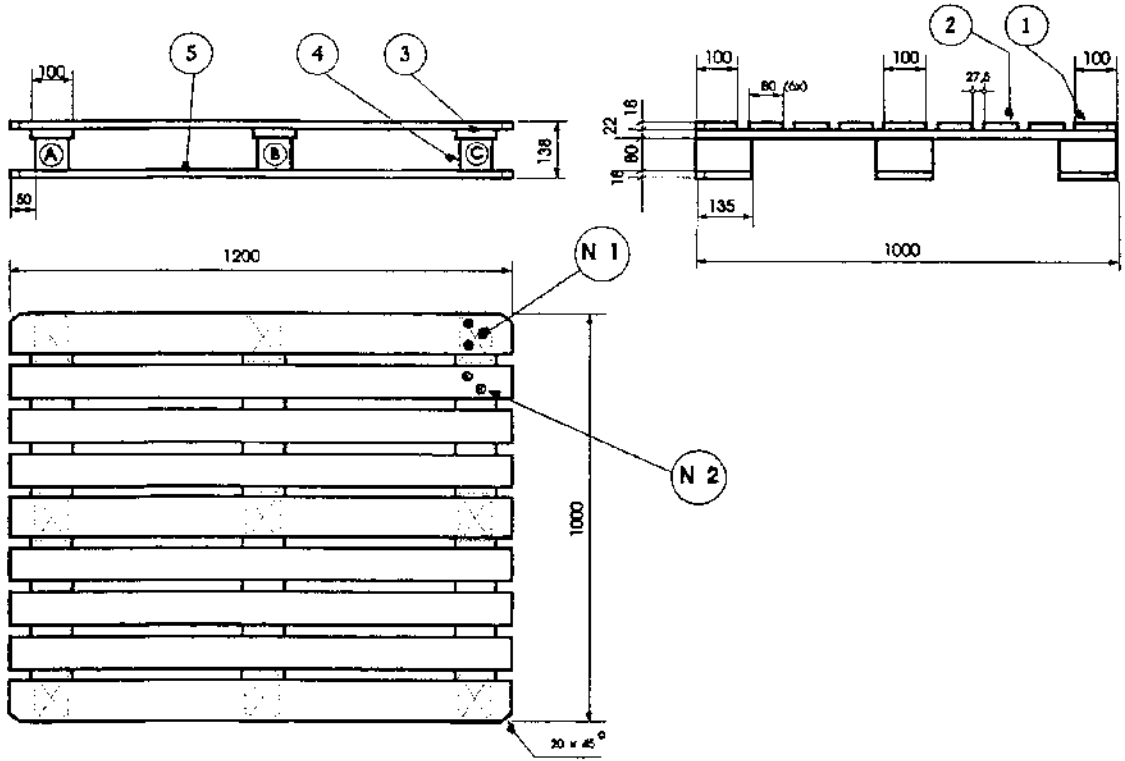


CP

CHEMICAL INDUSTRY PALLETS

01-08-1995

edition : 5



pos.	number	items	dimensions (mm)		
			thickn.	width	length
1	3	deck boards	18	100	1200
2	6	deck boards	18	80	1200
3	3	stringers	22	100	1000
4	9	blocks	80	80	135
5	3	bottom boards	18	135	1200
N1	27				
N2	36	see fixation			
N3	18				
A - B - C			see marking		

wood volume : 40.0 dm³

1000 x 1200 mm

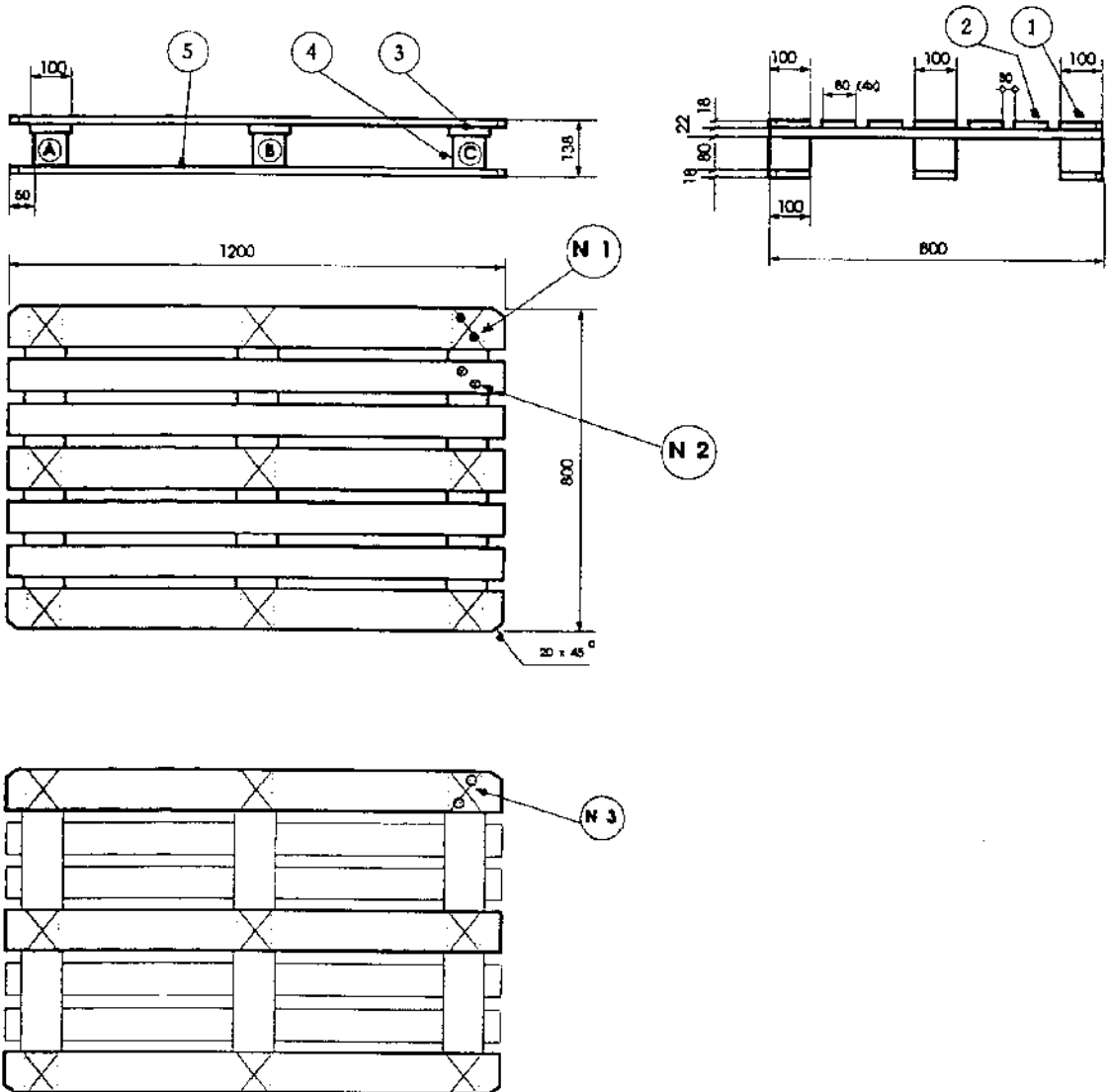
CP 1

CP

CHEMICAL INDUSTRY PALLETS

01-08-1995

edition : 5



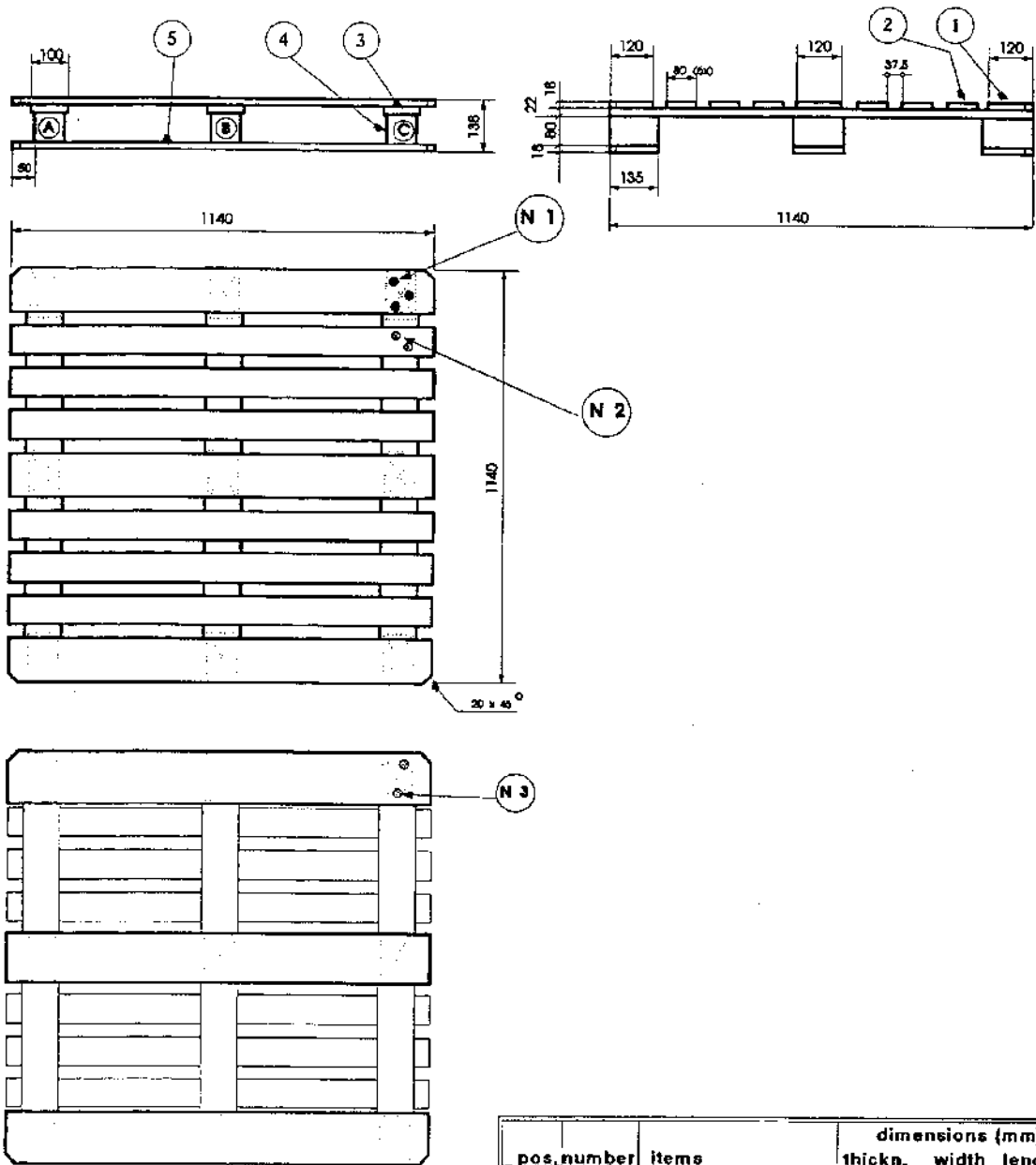
pos. number	items	dimensions (mm)		
		thickn.	width	length
1	3 deck boards	18	100	1200
2	4 deck boards	18	80	1200
3	3 stringers	22	100	800
4	9 blocks	80	80	100
5	3 bottom boards	18	100	1200
N1	18			
N2	24	see fixation		
N3	18			
A - B - C		see marking		
wood volume :		30.9 dm ³		
800 x 1200 mm		CP 2		

CP

CHEMICAL INDUSTRY PALLETS

01-08-1995

edition : 5



pos. number	items	dimensions (mm)		
		thickn.	width	length
1	3 deck boards	18	120	1140
2	6 deck boards	18	80	1140
3	3 stringers	22	100	1140
4	9 blocks	80	80	135
5	3 bottom boards	18	135	1140
N1	27			
N2	36 see fixation			
N3	18			

A - B - C see marking

wood volume : 40.8 dm³

1140 x 1140 mm

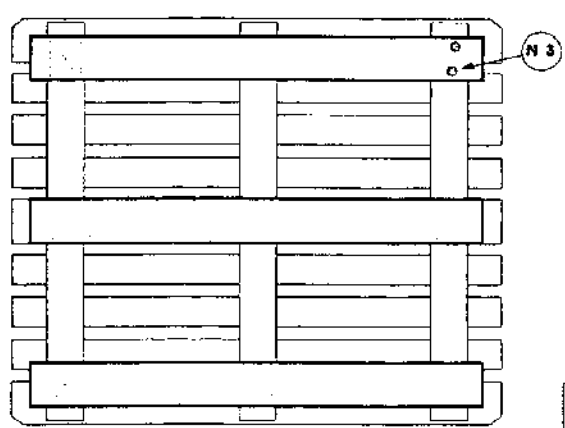
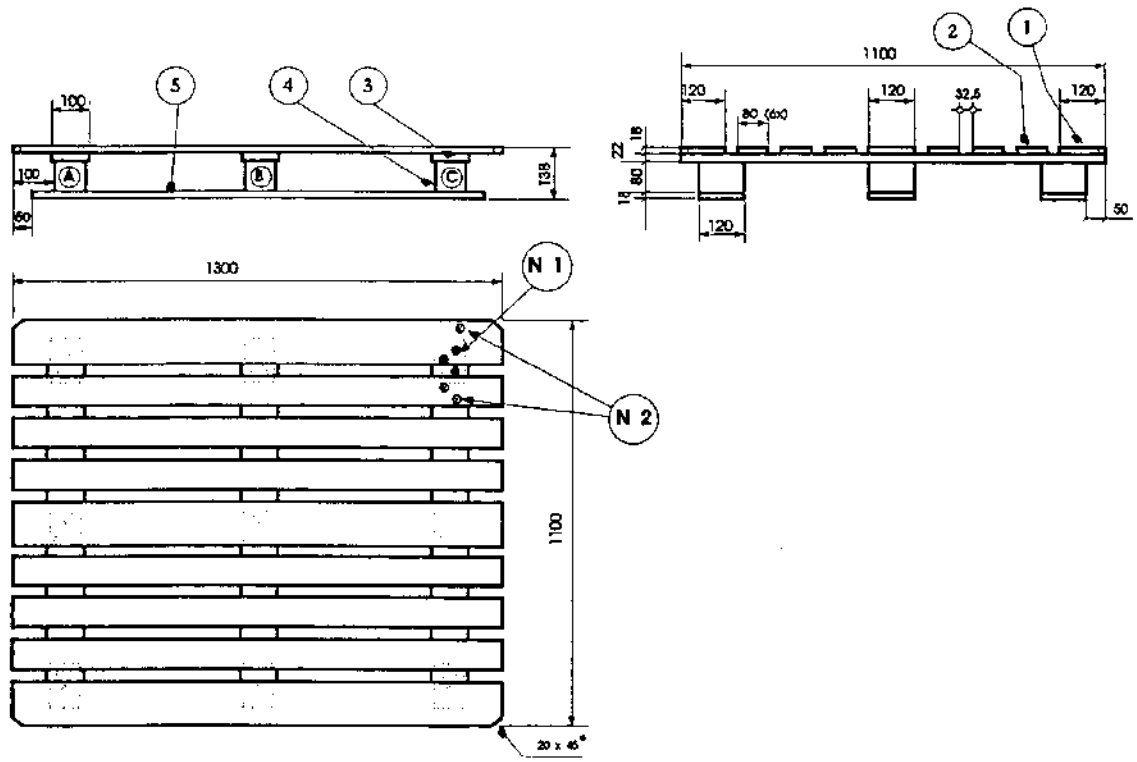
CP 3

CP

CHEMICAL INDUSTRY PALLETS

01-08-1995

edition : 5



pos. number	items	dimensions (mm)		
		thickn.	width	length
1	3 deck boards	18	120	1300
2	6 deck boards	18	80	1300
3	3 stringers	22	100	1100
4	9 blocks	80	80	120
5	3 bottom boards	18	120	1200
N1	27			
N2	42	see fixation		
N3	18			
A - B - C	see marking			

wood volume : 41.6 dm³

1100 x 1300 mm

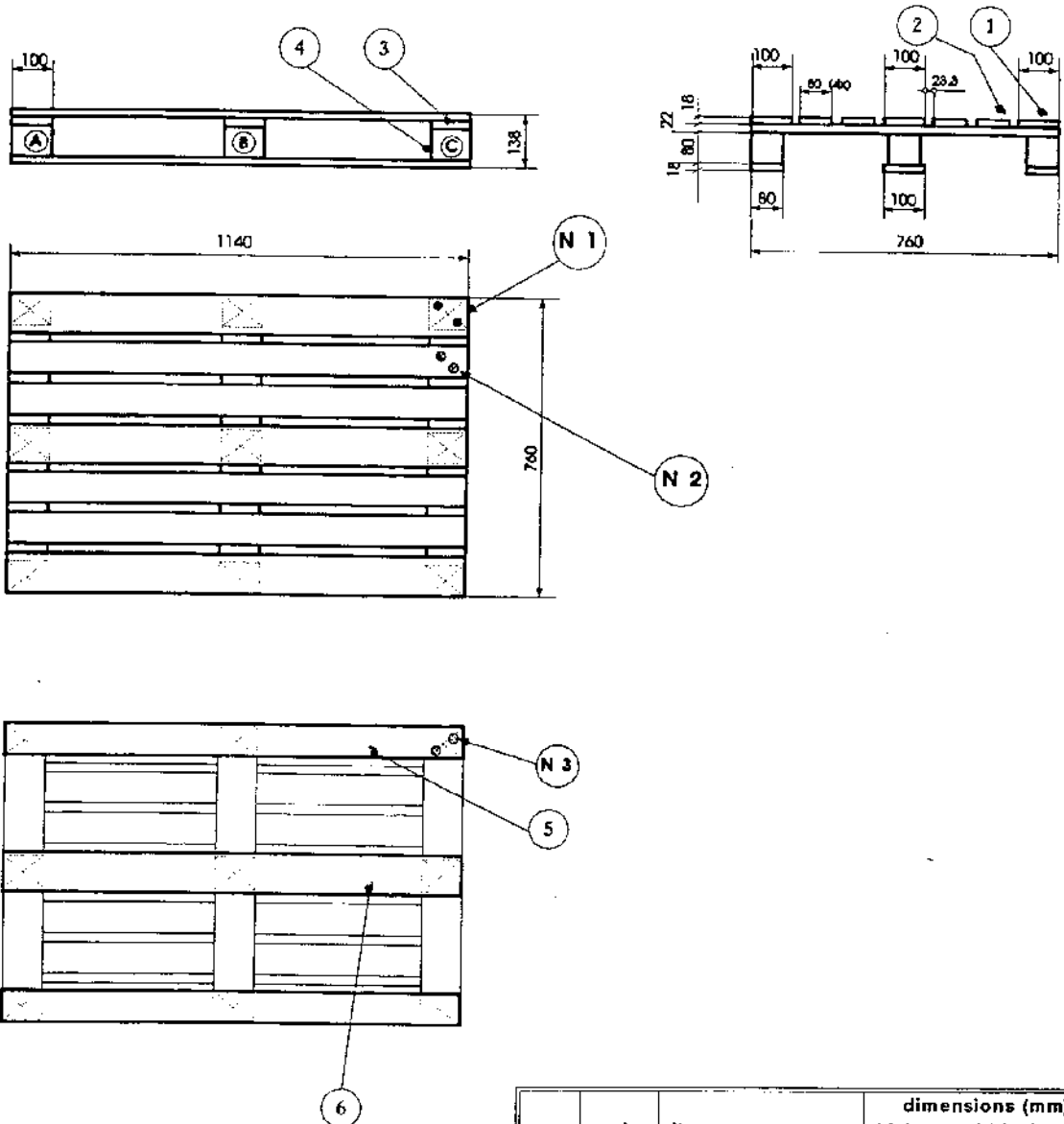
CP 4

CP

CHEMICAL INDUSTRY PALLETS

01-08-1995

edition : 5



pos.	number	items	dimensions (mm)		
			thickn.	width	length
1	3	deck boards	18	100	1140
2	4	deck boards	18	80	1140
3	3	stringers	22	100	760
4	9	blocks	80	80	100
5	2	bottom boards	18	80	1140
6	1	bottom board	18	100	1140
N1	18				
N2	24	see fixation			
N3	18				
A - B - C			see marking		

wood volume : 28.8 dm³

760 x 1140 mm

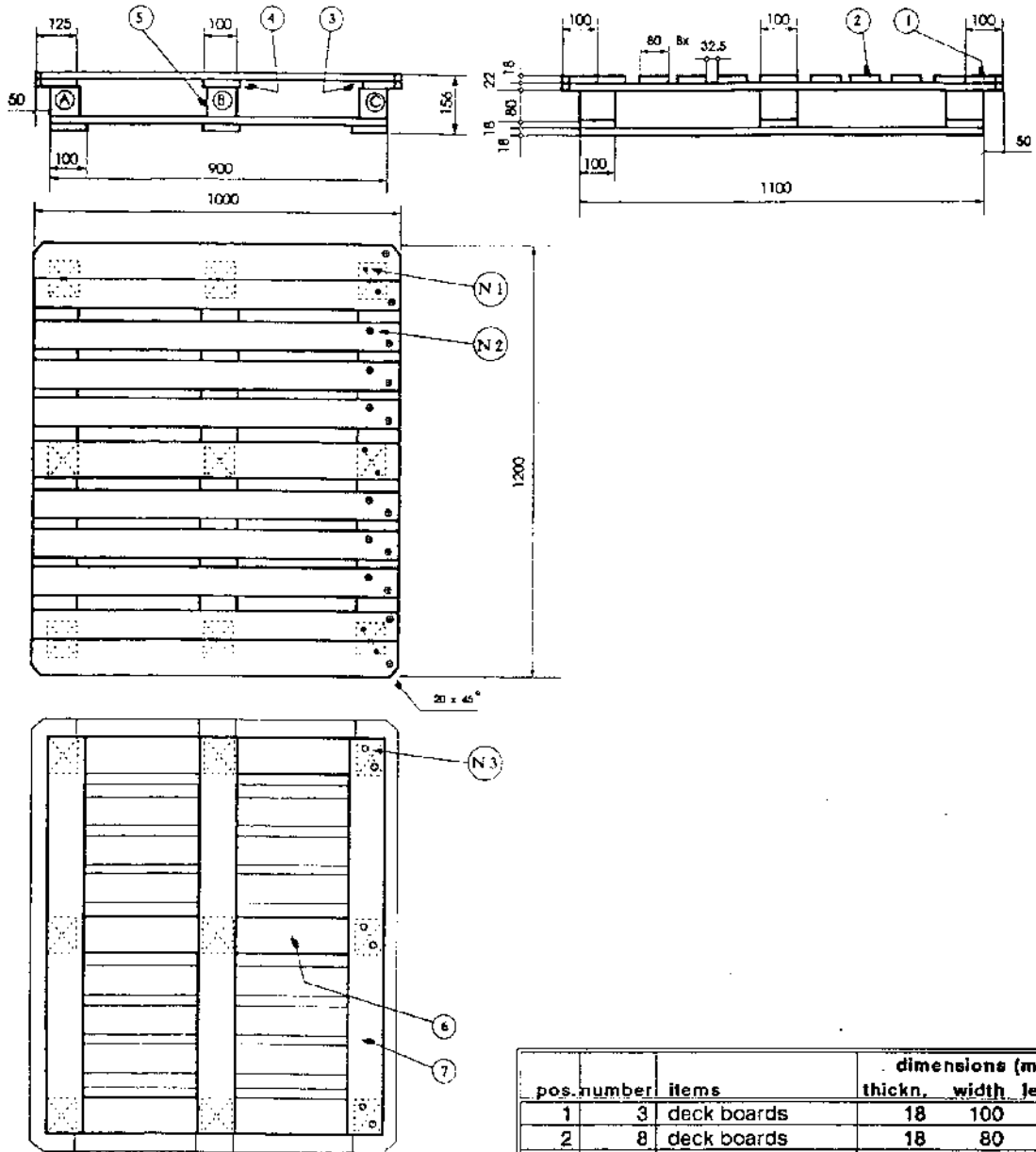
CP 5

CP

CHEMICAL INDUSTRY PALLETS

01-08-1995

edition : 5



pos. number	items	dimensions (mm)		
		thickn.	width	length
1	3 deck boards	18	100	1000
2	8 deck boards	18	80	1000
3	2 stringers	22	125	1200
4	1 stringer	22	100	1200
5	9 blocks	80	80	100
6	3 bottom boards	18	100	900
7	3 bottom boards	18	100	1100
N1	18			
N2	48	see fixation		
N3	18			

A - B - C see marking

wood volume : 42.7 cm³

1200 x 1000 mm

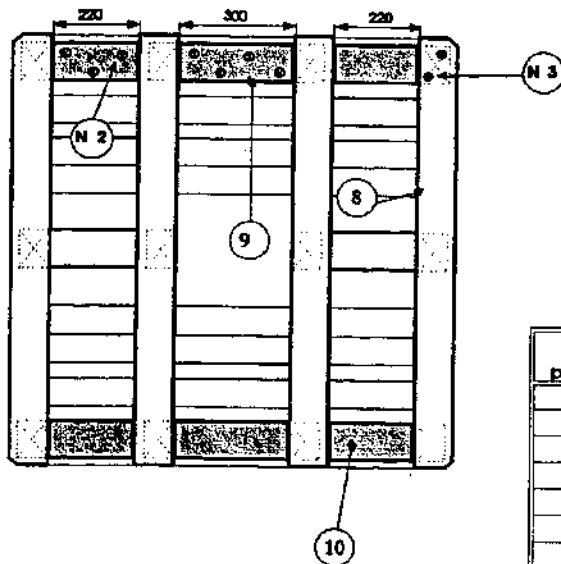
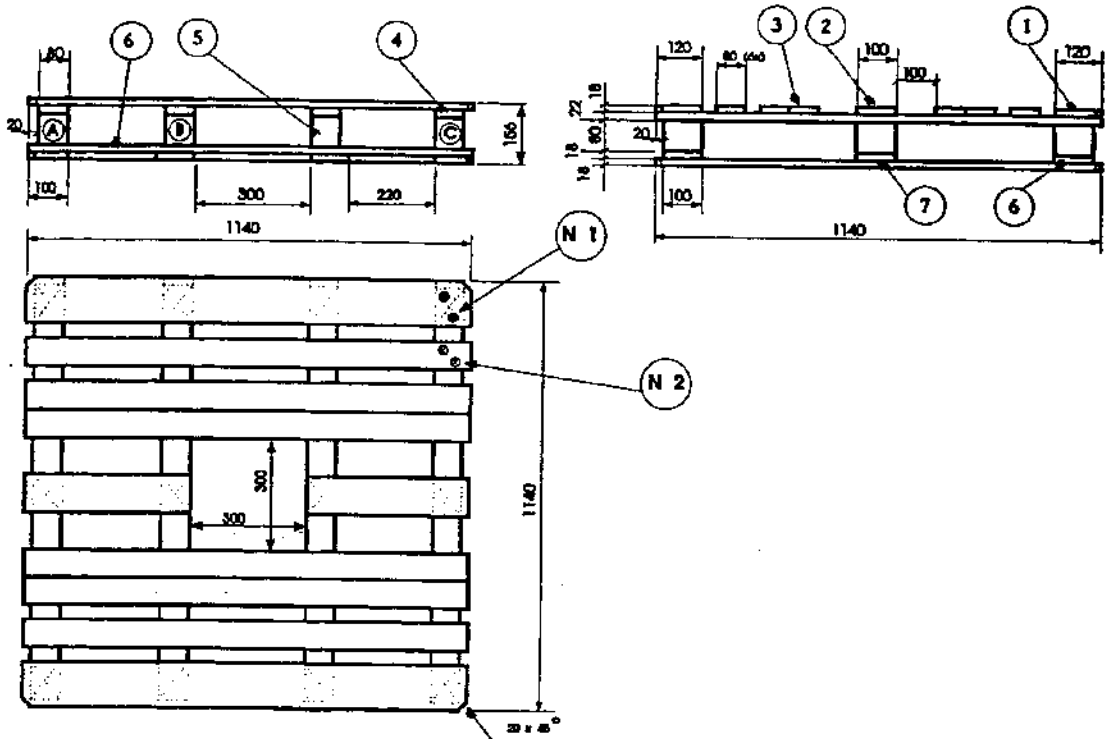
CP 6

CP

CHEMICAL INDUSTRY PALLETS

01-08-1995

edition : 5



pos. number	items	dimensions (mm)		
		thickn.	width	length
1	2 deck boards	18	120	1140
2	2 deck boards	18	100	420
3	6 deck boards	18	80	1140
4	4 stringers	22	80	1140
5	12 blocks	80	80	100
6	2 bottom boards	18	100	1140
7	2 bottom boards	18	100	420
8	4 bottom boards	18	100	1140
9	2 filling boards	18	100	300
10	4 filling boards	18	100	220
N1	24			
N2	48+20	see fixation		
N3	24			
A - B - C		see marking		

wood volume : 48.5 dm³

1140 x 1140 mm

CP 8

CP type :	Type of defect			Number of noticed defects					
	critical	major	minor	sample 1			sample 2		
				critical	major	minor	critical	major	minor
Wood									
1	other species than allowed	X							
2	pieces not square - edged		X						
3	warping boards, cracked blocks								
4	fissures in grain direction > board width		X						
5	significant slope of grain		X						
6	bark or warne of edge - or cross board	X							
7	bark or warne of other board > 1/3 of thickness								
8	live knots > 1/3 of board width			> 2/3 width			> 1/2 width		
9	dead or loose knots > 10 mm			> 1/3 width			> 1/4 width		
10	opposite branched knots			X					
11	dirt, mould or rot, borer holes			X					
12	chemically treated wood	X							
Fixation									
13	other than allowed nails or staples	X							
14	missing nails or staples	> 3 pc.		3 pc.			1 pc.		
15	protruding nails or staples	> 2 mm		> 1 mm					
Tolerances									
16	board length (*)	> +4/-8 mm		> +2/-5 mm			> +0/-3 mm		
17	board width (*)	> +/-8 mm		> +/-5 mm			> +3/-2 mm		
18	board thickness (*)	> +4/-2 mm		> +3/-1 mm			> +2/-0 mm		
19	block size (*)	> +/-8 mm		> +/-6 mm			> +/-3 mm		
20	pallet size	> +/-8 mm		> +/-6 mm			> +/-3 mm		
21	difference of diagonals	> 20 mm		> 10 mm					
(*) average of measurements on 2 items on 2 points each									
Marking									
22	not correctly burned into the blocks	X							
Supplier :		Allowed number of defects			Sum of noticed defects				
		0	2	5					
Reference of delivery :		Controller name :			Date :				
					Acceptance of delivery				
					YES or NO				