



AUSTRALIAN RAIL TRACK CORPORATION LTD

Discipline: Engineering (Track & Civil)

Category:

Standard

# Track Fastenings

## ETF-00-01

### Applicability

New South Wales	✓	CRIA (NSW CRN)	
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### Primary Source

ARTC Standards TCS 03, TDS 03 and TEP 01
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### Document Status

Version	Date Reviewed	Prepared by	Reviewed by	Endorsed	Approved
1.1	18 Jun 10	Standards	Manager Standards	Exec Manager SS&P 21/06/2010	CEO

### Amendment Record

Version	Date Reviewed	Clause	Description of Amendment
1.0	01 Dec 09		Implementation draft. Supersedes NSW Standards TCS 03 v1.1, TDS 03 v1.1, TEP 01 v1.2
1.1	18 Jun 10		Banner added regarding mandatory requirements in other documents and alternative interpretations.

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**Mandatory requirements also exist in other documents.**

**Where alternative interpretations occur, the Manager Standards shall be informed so the ambiguity can be removed. Pending removal of the ambiguity the interpretation with the safest outcome shall be adopted.**

## 1 Purpose

This document sets out the usage of fishbolts, washers and nuts and swage fastenings.

Australian and other related standards are shown in Appendix 1.

Some recommended components are shown in Appendix 2.

## 2 Fishbolts, washers and nuts

### 2.1 Material specifications

Fishbolts shall be supplied in accordance with AS 1085.4, to the length and diameter shown below. Special fishbolts stated below are similarly to be to AS 1085.4 with a modified neck shape.

Washers shall be supplied in accordance with AS 1085.7. The nominal size shall be the associated bolt diameter. Washers are not supplied for rail sections listed below.

Nuts shall be supplied in accordance with AS 1085.4.

### 2.2 Standard fishbolts

The size of standard fishbolts is specified below.

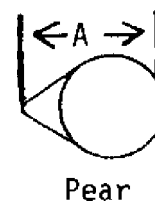
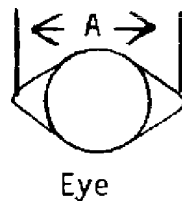
RAIL SECTION		FISHBOLT	
METRIC	IMPERIAL CODING	LENGTH	DIAMETER
50 - 53	100 AS 28, 100 AS 25, 103 AS 36	135	24
53 AS 78	107 AS 36		
45 - 40	90 AS 28, 90 AS 25, 80 AS 'B' 28	140	24
47 AS 78	80 AS 25, 94 AS 37		
45 - 50	100 AS 21, 100 AS 16, 100C <sup>A</sup> 100 <sup>C</sup> 90 AS 21, 90 AS 16, 90J	130	24
30 - 40	80 AS 21, 80Aa 80A 78H 70 AS 28 60 AS 'B' 28 60 AS 'B' 28	115	22
30 - 40	80 AS 16 80A 60 AS 25	110	22
30	60 AS 16, 60B <sup>a</sup> 60B	90	20
30	60 AS 21 (No Washer)	90	20
35 - 40	80 A <sup>3</sup> 71.5 (Butt joints only)	115	24

## 2.3 Special fishbolts

The size of special fishbolts is specified below.

RAIL SECTION		FISHBOLTS			
METRIC	IMPERIAL CODING	LENGTH	DIAMETER	SHAPE OF NECK	DIMENSION 'A'
34 - 40	80A2 80A3 71.5D 80E 75F Deep plate 75F Sharp plate – no washer	100	22	Eye	32
37	75 BHP	110	22	Pear	30
40	80E	100	22	22mm round	-
30	60B'	85	20	Eye	28
30	60B'	85	20	Eye	28

The shape of the neck of special fishbolts shall be:



## 3 Swage fastenings

### 3.1 Scope

Swage fasteners are generally suitable for all track components designed for bolted connections. Due to their better holding ability, a more durable joint is achieved with swage fasteners than with bolted connections (providing the material of the joint components does not yield after application of the fasteners).

Swage fasteners are suitable for operating conditions under design axle loads up to 30 tonnes at 80 km/h, impact factor of 2.5 and 35 million gross tonnes. Their use is restricted to 47, 50, 53 and 60kg/m trackwork.

Swage fasteners may be applied to rail joints (non-slip types), crossings and other turnout components.

### 3.2 Approved application

Only approved swage fastenings are to be used. Their application is to be restricted to trackwork in good condition, where the contacting surfaces and components of the joint can support the high clamping forces involved.

Mild steel fishplates are unsuitable for swage fastener application. Only fishplates manufactured from medium carbon steel conforming to AS 1085 Part 2 in their mechanical and chemical properties (equivalent to rail steel) may be used.

Worn crossings and checkrails, which have been loose for a period of time under traffic must be checked and conform to the standard dimension before the application of swage fastenings.

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*Note: Softer spacing blocks of these components are subject to wear, thus resulting in reduction of overall dimensions. If these blocks are worn or remain loose when threaded bolts inserted for checking are tightened, swage fasteners are not to be used unless blocks are replaced.*

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### 3.3 Quality of components

Joint components are to be clean and allow an even seating of the contacting surfaces. Swage fastener heads and collars must be fitted with washers made from cast or formed high strength steel to spread the clamping forces of the swage fasteners over a larger area. The hole diameter of the washer under collar must not be larger than 1.5mm in diameter than the shaft size of the swage fastener, otherwise the collar may yield into the gap.

For the repair of insulated joints made from the encapsulated fishplates, large 3 hole flat bars made from medium carbon steel must be used under heads and collars of swage fasteners to avoid yielding or deformation of the insulating material.

## 4 Appendix 1

<b>AS 1085 - RAILWAY TRACK MATERIAL AND OTHER RELATED STANDARDS</b>		
<b>STANDARD NUMBER</b>	<b>TITLE</b>	<b>SYNOPSIS</b>
AS 1085.1	Steel rails	This Standard provides purchasers and suppliers, including owners, operators, designers and manufacturers of railway rail with requirements for as-rolled and hardened steel rails, made from continuously cast blooms for railway purposes.
AS 1085.2	Fishplates	The objective of this Standard is to provide purchasers and suppliers, including owners, operators, designers and manufacturers of railway rail with requirements for fishplates for use with rails in accordance with AS 1085.1 in railway track.
AS 1085.3	Sleeper plates	The objective of this Standard is to provide manufacturers and purchasers with materials, dimensions and performance requirements for rolled or cast sleeper plates of clip fastening and double shoulder type intended for use with timber sleepers in railway track. Includes former AS 1085.9 - 1986 Rolled steel clip fastening sleeper plates and former AS 1085.16 - 1995 Cast sleeper plates.
AS 1085.4	Fishbolts and nuts	The objective of this Standard is to provide manufacturers and purchasers with manufacturing and performance requirements for oval-necked fishbolts and nuts for use with fishplates and spring washers in railway track in accordance with the AS 1085 series of Standards.
AS 1085.7	Spring washers	The objective of this Standard is to provide manufacturers and users of spring washers with performance requirements for spring washers for use in railway track.
AS 1085.8	Dogspikes	The objective of this Standard is to provide designers and manufacturers with requirements for dogspikes for use with steel rails. It covers 16mm and 19mm square shank dogspikes and 22mm round shank dogspikes.
AS 1085.10	Rail anchors	Provides manufacturing and performance requirements for one-piece rail anchors, without specifying dimensions or tolerances. Now incorporates amendments and a typical design.
AS 1085.12	Insulated joint assemblies	Specifies requirements for manufacturers, specifiers and purchasers with performance requirements for insulated joints for use in railway track. Includes factory-assembled bonded joints, and field-assembled insulated joint systems.
AS 1085.13	Spring fastening spikes for sleeper plates	The Standard provides manufacturers and purchasers with requirements for spring fastening spikes for use in railway permanent way.
AS 1085.14	Prestressed concrete sleepers	The Standard provides purchasers and suppliers including owners, operators, designers and manufacturers of railway sleepers with requirements for the specification, manufacture and testing of prestressed concrete sleepers for use in railway track.
AS 1085.17	Steel sleepers	The Standard sets out requirements for the design, manufacture and testing of trough shaped steel sleepers and their associated components for use in railway track. Also sets out requirements for electrical performance of rail insulating when required. The Standard applies to sleepers manufactured from steel with known mechanical properties. It does not cover the techniques and equipment for the manufacture of steel sleepers or associated components.

<b>AS 1085 - RAILWAY TRACK MATERIAL AND OTHER RELATED STANDARDS</b>		
<b>STANDARD NUMBER</b>	<b>TITLE</b>	<b>SYNOPSIS</b>
AS 1085.18	Screw spikes and threaded inserts	This Standard specifies requirements for steel screw spikes and threaded inserts for use as part of a fastening system that holds rail to sleepers or slabs for railway permanent way. A preferred shape is specified and information given on optional shapes.
AS 1085.19	Resilient Fastening assemblies	This Standard specifies requirements for resilient fastening assemblies for use in conjunction with steel rails and sleepers or other support structures for railway track for insulated and non-insulated applications.
AS 1085.20	Welding of Steel Rail	This Standard specifies performance requirements for welds in steel rail in accordance with AS 1085.1 or rails that are shown to metallurgically equivalent, for use in railway track.
AS 2758.7	Railway Ballast	The Standard provides a basis for specifying requirements for the supply of aggregates intended for use as railway ballast.
AS 2878	Timber - Classification into strength groups	This Standard provides producers and users of structural grade timber with procedures for establishing the strength group to which a species belongs for use in stress-grading structural timber and determining structural properties.
AS 3818.1	Structural Timber - General	This Standard provides producers and users of visually graded timber products with general requirements for the specific products covered by other parts of this series.
AS 3818.2	Structural Timber - Railway Track Timbers	This Standard provides producers and users of railway track timbers with requirements for the visual grading and selection of species of such timbers intended for use in railway track.

## 5 Appendix 2

DESCRIPTION	DRAWING	STANDARDS	MATERIAL
JOINT BAR 107LB RAIL FISH PLATE TRACK 1/8 INCH, NYLON LINER	M04-216-39P91	AS 1085.2	AS 1442
15 TON TRACK JACK SG IRON	Supplier's Spec		AS 1831/ 500
JOINT BAR RAIL, JUNCTION PLATE RH SLOTTED, 6 HOLE 53KG-47KG.	SS 01& SRA appr. DWG.	AS 1085.2	AS 1442
JOINT BAR, RAIL 47KG 6 HOLE	AS 1085.2 Fig.2	AS 1085.2	AS 1442
JOINT BAR, RAIL 50KG 6 HOLE	SRA appr DWG ie BHP 2300	AS 1085.2	AS 1442
BOW FISHPLATE FOR THERMIT WELDING - 47 AND 53 KG	925-712	AS 1085.2	AS 1442
JOINT BAR, RAIL 53KG 6 HOLE	AS 1085.2 SRA appr DWG	AS 1085.2	AS 1442
JOINT BAR, RAIL 60KG 6 HOLE	SRA appr DWG ie BHP 2301	AS 1085.2	AS 1442
JOINT BAR, RAIL 53KG BOWED FOR WELDED JOINT	925-712	AS 1085.2	AS 1442
SLEEPER PLATE, RAILWAY, 205 MM WIDE, 53/60KG RAIL CLIP TYPE	ISP 95086	AS 1085.16	AS 1831/500-7 SG IRON
SLEEPER PLATE, RAILWAY CAT NO. 485 200MM WIDE, 53/60KG, ZERO CANT, 6HOLE RAIL BASE 146MM, CLIP TYPE.	91-205 B ISP-95485 B	AS 1085.16	AS 1831/500-7 SG IRON
BRACE, RAILWAY RAIL PLATE BRANDED 163 TRACK-RAIL	91-152	AS 1085.16	AS 1831/500-7 SG IRON
BRACE, RAILWAY RAIL PLATE BRANDED 168 TRACK-RAIL	91-157	AS 1085.16	AS 1831/500-7 SG IRON
BRACE, RAILWAY PLATE BRANDED 169, TRACK-RAIL	91-158	AS 1085.16	AS 1831/500-7 SG IRON
BRACE RAILWAY PLATE, TRACK-RAIL	205A-355	AS 1085.16	AS 1831/500-7 SG IRON
SLEEPER PLATE, RAILWAY CAT NO. 430 127 mm RAIL BASE, DOUBLE SHOULDER STANDARD PLATE	SP 440 BHP Dwg2705	AS 1085.16	AS 1831/500-7 SG IRON
SLEEPER PLATE,RAILWAY CAT NO. 433 A 127 mm RAIL BASE, DOUBLE SHOULDER CANT REDUCING	205A-635 or SRA app Dwg	AS 1085.16	AS 1831/500-7 SG IRON
SLEEPER PLATE,RAILWAY CAT NO. 434 A 127 mm RAIL BASE, DOUBLE SHOULDER	205A-628 or SRA app Dwg	AS 1085.16	AS 1831/500-7 SG IRON
SLEEPER PLATE,RAILWAY CAT NO.435 &480 - 127 mm RAIL BASE, DOUBLE SHOULDER LEVEL BASE	205A-629 BHP Dwg2700	AS 1085.16	AS 1831/500-7 SG IRON
SLEEPER PLATE, RAILWAY CAT NO. 420 146 mm RAIL BASE, DOUBLE SHOULDER STANDARD PLATE	SP 440 BHP Dwg2706	AS 1085.16	AS 1831/500-7 SG IRON
SLEEPER PLATE, RAILWAY CAT NO. 425 A 146 mm RAIL BASE, DOUBLE SHOULDER ZERO CANT	205A-631 BHP Dwg2703	AS 1085.16	AS 1831/500-7 SG IRON
SLEEPER PLATE, RAILWAY CAT NO.486 146 mm RAIL BASE, CLIP TYPE 1 IN 20 CANT.	91-203 A ISP 95486	AS 1085.16	AS 1831/500-7 SG IRON
SLEEPER PLATE, RAILWAY CAT NO. 487 146 mm RAIL BASE, CLIP TYPE 1 IN 30 CANT.	91-204 A ISP 95487	AS 1085.16	AS 1831/500-7 SG IRON
SLEEPER PLATE, RAILWAY CAT NO. 488 146 mm RAIL BASE, CLIP TYPE 1 IN 40 CANT.	91-204 A ISP 95488	AS 1085.16	AS 1831/500-7 SG IRON
SLEEPER PLATE, RAILWAY CAT NO. 489 146 mm RAIL BASE, CLIP TYPE 1 IN 100 CANT.	91-204 A ISP 95489	AS 1085.16	AS 1831/500-7 SG IRON



DESCRIPTION	DRAWING	STANDARDS	MATERIAL
SLEEPER PLATE FOR SCREWSPIKES, RAILWAY CAT NO. 485 S 146 mm RAIL BASE, CLIP TYPE ZERO CANT.	ISP 96485	AS 1085.16	AS 1831/500-7 SG IRON
SLEEPER PLATE FOR SCREWSPIKES, RAILWAY CAT NO. 487 S 146 mm RAIL BASE, CLIP TYPE ZERO CANT.	ISP 96487	AS 1085.16	AS 1831/500-7 SG IRON
SLEEPER PLATE FOR SCREWSPIKES, RAILWAY CAT NO. 488 S 146 mm RAIL BASE, CLIP TYPE 1 IN 40 CANT.	ISP 96488	AS 1085.16	AS 1831/500-7 SG IRON
SLEEPER PLATE FOR SCREWSPIKES, RAILWAY CAT NO. 489 S 146 mm RAIL BASE, CLIP TYPE 1 IN 80 CANT	ISP 96489	AS 1085.16	AS 1831/500-7 SG IRON
STANDARD TRACK PLATE 107LB AND 94LB.	SP 509	AS 1085.3	AS 3678/250
JOINT BAR RAIL, JUNCTION PLATE RH SLOTTED, 6 HOLE 60KG-53KG	SS O1 and SRA appr. DWG.	AS 1085.2	AS 1442
JOINT BAR RAIL, JUNCTION PLATE LH SLOTTED, 6 HOLE 60KG-53KG.	SS O1 and SRA appr. DWG.	AS 1085.2	AS 1442
JOINT BAR RAIL, JUNCTION PLATE LH SLOTTED, 6 HOLE 53KG-47KG	SS O1 and SRA appr. DWG.	AS 1085.2	AS 1442
BOLT, FISHPLATE, HEAT TREATED,M20X100 C/W NUT AND WASHER	AS 1085.4	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No. 3 C/W NUT AND WASHER	91-187 C	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No. 5 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No.6 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No.7 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No.8 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No.9 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No.10 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No. 11 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No.12 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No.13 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No. 14 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No. 15 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No.16 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No.17 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No. 18 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No. 20 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No. 21 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4

DESCRIPTION	DRAWING	STANDARDS	MATERIAL
BOLT, CHAIR, SQUARE NECK, CAT No. 23 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No. 24 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, CHAIR, SQUARE NECK, CAT No. 25 C/W NUT AND WASHER	91-188 D	AS 1085.4	AS 1085.4
BOLT, FISHPLATE, HEAT TREATED, M22X115 C/W NUT AND WASHER	AS 1085.4	AS 1085.4	AS 1085.4
BOLT, FISHPLATE, HEAT TREATED, M24X140 C/W NUT AND WASHER	205A-323C	AS 1085.4	AS 1085.4
BOLT, MACHINE, HEX MET HT M24X159 C/W NUT AND WASHER	AS 1252	AS 1252	N/A
BOLT, MACHINE, HEX MET HT M24X180 C/W NUT AND WASHER	AS 1252	AS 1252	N/A
BOLT, MACHINE, HEX MET HT M24X200 C/W NUT AND WASHER	AS 1252	AS 1252	N/A
BOLT, MACHINE, HEX MET HT M30X200 C/W NUT AND WASHER	207-561 D	AS 1252	207-561 D
BOLT, MACHINE, HEX MET HT M30X250 C/W NUT AND WASHER	207-561 D	AS 1252	207-561 D
BOLT, MACHINE, HEX MET HT M30X300 C/W NUT AND WASHER	207-561 D	AS 1252	207-561 D
BOLT, MACHINE, HEX MET HT M30X350 C/W NUT AND WASHER	207-561 D	AS 1252	207-561 D
BOLT, MACHINE, HEX MET HT M30X400 C/W NUT AND WASHER	207-561 D	AS 1252	207-561 D
BOLT, MACHINE, HEX MET HT M30X450 C/W NUT AND WASHER	207-561 D	AS 1252	207-561 D
BOLT, MACHINE, HEX MET HT M30X500 C/W NUT AND WASHER	207-561 D	AS 1252	207-561 D
BOLT, MACHINE, SQUARE HEAD, M24X250 C/W NUT AND WASHER	91-171 D	AS 1085.4	91-171 D
BOLT, MACHINE, SQUARE HEAD, M24X300 C/W NUT AND WASHER	91-171 D	AS 1085.4	91-171 D
BOLT, FISHPLATE, HEAT TREATED, M24X100 C/W NUT AND WASHER	AS 1085.4	AS 1085.4	AS 1442
HEEL BOLT CUP HEAD M24X280 C/W NUT AND WASHER	205A-324 B	AS 1085.4	AS 1442
HEEL BOLT HEX HEAD M24X280 C/W NUT AND WASHER	205A-324 B	AS 1085.4	AS 1442
BOLT HOUSING TYPE 2, M24 C/W NUT AND WASHER	91-191 B	AS 1085.4	AS 1442
SPIKE, TRACK, ROUND SHANK 22 MM SHANK DIA, 119 MM LONG FORGED, STEEL (DOG SPIKE)	L5522B	AS 1085.8	FORGED
BOLT, RAIL BRACE, SQUARE HEAD M24X120 C/W NUT AND WASHER	91-170 D	AS 1085.4	AS 1085.4
BOLT, MACHINE, SQUARE HEAD, M24X245 C/W NUT AND WASHER	91-171 D	AS 1085.4	AS 1442
BOLT, MACHINE, HEX HEAD, M24X175 C/W NUT AND WASHER	310-1019 D	AS 1252	N/A
BOLT, MACHINE SQUARE HEAD, M24X140 C/W NUT AND WASHER	205A-370 C	AS 1085.4	AS 1442
SPIKE, TRACK, ROUND SHANK CHAIR CUP HEAD 22X152MM	205A-677	AS 1085.8	FORGED

DESCRIPTION	DRAWING	STANDARDS	MATERIAL
SPIKE, TRACK LOCK TYPE L6	AS 1085.13	AS 1085.13	BHP XS 1070
SPIKE, TRACK LOCK TYPE L1	AS 1085.13	AS 1085.13	BHP XS 1070
STANDARD M.S. "A" CHAIR 53, 50, 47 AND 41 KG RAIL	91-180	AS 1085.3	AS 3678/250
STANDARD M.S. "B" CHAIR 53, 50, 47 AND 41 KG RAIL	91-181	AS 1085.3	AS 3678/250
STANDARD M.S. "C" CHAIR 53, 50, 47 AND 41 KG RAIL	91-182	AS 1085.3	AS 3678/250
STANDARD M.S."D" CHAIR 53, 50, 47 AND 41KG RAIL.	91-183	AS 1085.3	AS 3678/250
STANDARD M.S."D" CHAIR 60KG RAIL.	197-311	AS 1085.3	AS 3678/250
TIE PLATE, RAILWAY CHAIR STEEL	197-311	AS 1085.3	AS 3678/250
TIE PLATE, RAILWAY CHAIR SPECIAL LG	197-312	AS 1085.3	AS 3678/250
STANDARD M.S. "C.R." CHAIR 53, 50, 47 AND 41KG RAIL	91-186	AS 1085.3	AS 3678/250
STANDARD M.S. "S.R." CHAIR 53, 50, 47 AND 41KG RAIL	91-185 A	AS 1085.3	AS 3678/250
RAIL ANCHOR, RAILWAY 80LB	N/A	AS 1085.10	N/A
RAIL ANCHOR, RAILWAY 47KG	N/A	AS 1085.10	N/A
RAIL ANCHOR, RAILWAY 53KG	N/A	AS 1085.10	N/A
HEEL BLOCK ASSEMBLY 53KG RAIL 5030 AND 6100 SWITCHES	184 - 483 A	N/A	AS 1830/T250 Gray Iron
BRACE, RAILWAY RAIL 47KG TYPE 4	91-169	N/A	AS 1832/310 SG IRON
BRACE, RAILWAY RAIL 53KG TYPE 3	91-168	N/A	AS 1832/310 SG IRON
BRACE, RAILWAY RAIL 60KG TYPE 5 DRILLED & DRESSED	207-599 B	N/A	AS 1832/310 SG IRON
RAIL FASTENING CLIP E2003	E-21027	Pandrol Spec1	XK 9261B AS 1444
RAIL FASTENING CLIP PR 401A	P4-30055	Pandrol Spec1	XK 9261B AS 1444
CLAMP C, "G"TYPE, STEEL	177A-26A	N/A	N/A
JOINT, GLUED, INSULATED 60KG; 3.43M LG; 0 VERSINE; PLAIN CARBON	N/A	ETA-01-01 AS 1085.12	N/A
JOINT, GLUED, INSULATED 60KG; 3.43M LG; 6 VERSINE; PLAIN	N/A	ETA-01-01 AS 1085.12	N/A
JOINT, GLUED, INSULATED 60KG 3.43M LG 3 VERSINE	N/A	ETA-01-01 AS 1085.12	N/A
JOINT, GLUED, INSULATED 60KG 4.57M LG 0 VERSINE PLAIN	N/A	ETA-01-01 AS 1085.12	N/A
JOINT, GLUED, INSULATED 60KG 4.57M LG 5 VERSINE PLAIN	N/A	ETA-01-01 AS 1085.12	N/A
JOINT, GLUED, INSULATED 60KG 4.57M LG 10VERSINE PLANE	N/A	ETA-01-01 AS 1085.12	N/A
INSULATOR, PLATE	Pandrol IN 55088	TPS 01 Pandrol Spec	TPS 01
RAIL PAD (H.D.P.E) 7.5MM THICK, 163MM WIDE X180MM LONG 53KG AND 60KG RAIL	RP-65225	N/A	HOECHST
JOINT, GLUED, INSULATED 60KG H/H 3.43M LG 6 VERSINE	N/A	ETA-01-01 AS 1085.12	N/A
JOINT, GLUED, INSULATED 60KG H/H 3.43M LG 3 VERSINE	N/A	ETA-01-01 AS 1085.12	N/A

DESCRIPTION	DRAWING	STANDARDS	MATERIAL
JOINT, GLUED, INSULATED 60KG H/H 3.43M LG 0 VERSINE	N/A	ETA-01-01 AS 1085.12	N/A
JOINT, GLUED, INSULATED 60 KG H/H 3.43M LG 10 VERSINE	N/A	ETA-01-01 AS 1085.12	N/A
JOINT, GLUED, INSULATED 60KG H/H 4.57M LG 5 VERSINE	N/A	ETA-01-01 AS 1085.12	N/A
JOINT, GLUED, INSULATED 60KG H/H 4.57M LG 0 VERSINE	N/A	ETA-01-01 AS 1085.12	N/A
JOINT, GLUED, INSULATED 53KG 3.43M LG 0 VERSINE	N/A	ETA-01-01 AS 1085.12	N/A
JOINT GLUED INSULATED 53KG 3.43M LG 3 VERSINE	N/A	ETA-01-01 AS 1085.12	N/A
JOINT, GLUED, INSULATED 53KG 3.43M LG 6 VERSINE	N/A	ETA-01-01 AS 1085.12	N/A
JOINT, GLUED INSULATED, 53KG 4.57M 0 VERSINE	N/A	ETA-01-01 AS 1085.12	N/A
JOINT, GLUED INSULATED , 53KG 4.57M LG 5 VERSINE	N/A	ETA-01-01 AS 1085.12	N/A
RAIL PAD (H.D.P.E) 5MM THICK, 190MM WIDE X190MM LONG 53KG AND 60KG RAIL	RP-65026	N/A	HOECHST
SHOULDER PIECE CHAMPHERED FOR 53KG LEAD	91-179	AS 1554.1	AS 1442-1973
WASHER, CHECK RAIL LOCK 53KG	310-1019 D	AS 1252.3- 1983	N/A
WASHER, LOCK STEEL 53X53X6MM 27MM HOLE	91-171D	AS 1252-1983	N/A
WASHER, BEVEL TAPER CAST STEEL CROSSING	207-561 D	AS 1252.3-19	Cast Steel AS 2074
WASHER, BEVEL HEADLOCK CAST STEEL FOR 47 & 53KG CROSSING	207-561D	AS 1252.3-19	N/A