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TRI-DESIGN 3000® SOFTWARE PACKAGE

Tri-Design 3000® software, a trademark of International Truss Systems (Pty) Ltd incorporates over 30 years of International development in the specification, design and manufacture of prefabricated timber roof trusses and has been adapted for South African conditions to comply with all relevant local and International Codes of Practice, Building Regulations and generally accepted methods of “good engineering practice”.

Tri-Design 3000® is a “state of the art” STRUCTURAL TIMBER ENGINEERING software package that has been written specifically for desktop computers. It offers fully interactive graphical input of modern timber structures and roofs, to produce output ranging from design calculations to fabrication detailing and costing.

Advanced features such as block to block building “jump” facilities for separated buildings and any combination of rectilinear, skew and splayed walls makes the ROOF INPUT module an industry leader.

A mouse driven graphical “query” facility allows effortless checking of correctness of input dimensions on even the most complicated of building shapes and any errors or changes can immediately be corrected using the MOVE NODE facility. This enormously useful function is ideal for changing the quoted “plan dimension” to actual “site dimensions” once a quote becomes an order.

A library of Standard Shapes and House Types is offered during ROOF INPUT to facilitate unrivalled speed of input on commonly used building shapes.

International Truss System’s attention to technical excellence is borne out in the HIP EDITOR. Every single type of hip used in South Africa has been specifically incorporated in the option, to allow limitless flexibility and maximum “user friendliness” to every estimator and Truss Plant Manager, irrespective of any particular hip system preference.

The user even has the option of building his own hip types.

Tri-Design 3000® with its powerful features of zoom, windowing and 3D rotation, from any elevation or angle, enables the user to view the roofscape from all combinations of direction and distance. It comes complete with its own GENERAL DRAFTING PACKAGE (GDP) thus eliminating the need for expensive “add on” costs of stand alone CAD/CAM systems. If required, it can also be linked to all major CAD software, to produce engineering drawings of the highest quality, with the minimum amount of time and effort.

Any combination of roof plots, 3D views, zooms into congested areas, truss and girder cutting and plating details as well as over 100 standard bracing and erection details, can simply be plotted or printed onto a single drawing sheet within seconds and without any actual additional draughting work.
Tri-Design 3000R incorporates a stand alone BEAM design module that allows the user to design structural timber beams using solid sections, "Superjoist" plated sections or laminated timber Glulam beams. Specials and "user defined" sizes can also be input.

Any combination of loads can be input and the output includes full calculations, stress analysis and deflection criteria.

Tri-Design 3000R also boasts SUPERCHORD. It is a unique feature in the truss design module which optimises timber selection in complex non-standard trusses, such as attics and top and bottom chord extensions of supported trusses. SUPERCHORD increases the depth of the supporting member through an additional member being plated "in-plane" over the required design bays, thus creating a SUPERCHORD.

Tri-Design 3000R comes complete with C.Q.P.S. or Client Quote Processing System which is a sophisticated but easy to use database, which tracks either projects, clients or sales staff, or any combination of the above, to produce useful management and sales statistics and reports.

Tri-Design 3000R also offers SUPERFAST, which is a rapid input/output routine in the truss design module for quoting on standard truss types and load combinations without having to input full roof layouts. This allows rapid comparisons of the cheapest of say 3 truss types, if no ROOF INPUT is required.

Through many years of development, testing and user feedback, the package has achieved its main aim. It is as user friendly as possible so as to be an essential tool to a broad spectrum of users, ranging from junior estimators to senior structural engineers.

It also has its place as a management tool in the office of every fabricator or professional practice involved in prefabricated timber roof construction through its capabilities of producing a variety of statistical analyses, profit and loss forecasting, production management and a comprehensive stock control facility.

It is a policy of International Truss Systems (Pty) Ltd to ensure that Tri-Design 3000R is constantly developed to remain at the forefront of technology.

Tri-Design 3000R is externally audited to ensure that our dynamic research and development program and all future improvements and upgrades of the program itself, comply with all current and future Codes of Practice and as such is your guarantee of engineering excellence from a professionally directed company.

**TRI-PLATER PUNCHED METAL CONNECTOR PLATES**

Tri-PlateR is a highly engineered punched metal connector plate that has been designed and developed for the local prefabricated timber truss industry.

It has been designed and manufactured in accordance with all the requirements of local and International Codes of Practice and has been tested and approved by the C.S.I.R.

Tri-PlateR can also be produced in a limited range of sheet steel gauges for differing structural requirements as well as special application steels for highly corrosive environments.

Tri-PlateR is manufactured in a range of sizes that suit the optimisation techniques of our "state of the art" computer programme which supports its use.

*International Truss Systems (Pty) Ltd policy is to constantly improve all products. In line with our policy, information on this document is subject to change without notice. For further information on the products please contact International Truss Systems (Pty) Ltd.*

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<table>
<thead>
<tr>
<th>REVISION</th>
<th>PAGE</th>
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<tbody>
<tr>
<td>05/2002</td>
<td>2</td>
</tr>
</tbody>
</table>
TRI-FIX\textsuperscript{R} STRUCTURAL TIMBER CONNECTOR COMPONENTS

Tri-Fix\textsuperscript{R} is a range of newly developed structural timber sundry components that encompass the most commonly used support elements in the design and erection of timber trusses.

During the development of the Tri-Fix\textsuperscript{R} range, ideas from the four corners of the globe have been evaluated and improved upon and the range of components offers the user unrivalled flexibility in timber connection and support hardware.

The Tri-Fix\textsuperscript{R} range of components have been designed and manufactured in accordance with all relevant local Codes of Practice and building regulations and have been tested by the C.S.I.R.

The full range of Tri-Fix\textsuperscript{R} timber connector components are maintained at our depots in Boksburg, Durban, Cape Town and Port Elizabeth.

TRI-NAIL\textsuperscript{R} SITE APPLICATION PLATES

Tri-Nail\textsuperscript{R} range of “site application plates” are produced for International Truss Systems (Pty)Ltd in 1mm thick galvanised steel coil to enhance the significant range of Tri-Plate\textsuperscript{R} punched metal connector plates used in prefabricated “factory” manufacture.

Tri-Nail\textsuperscript{R} range of plates are specifically produced to offer the benefits of “monoplanar” timber truss manufacture in rural or remote areas where electricity and hydraulically operated equipment is not available.

The Tri-Nail\textsuperscript{R} range of connector plates are fully tested and are supplemented by a comprehensive set of manuals or charts which offer technical guidance in their use and application.

NO POWER OR MECHANICAL equipment is required. The individual nails are simply driven into the timber using a conventional claw hammer.

TRI-MATE\textsuperscript{R}

Tri-Mate\textsuperscript{R} is a fully interactive software package designed specifically to meet the needs of professional practices, builders and hardware outlets involved in daily measurement and specification of building projects and materials lists.

Through a “user defined” database, the operator is able to produce a full library of the specific products, quantities and proportions of materials that go into individual building components.

Accurate and professional quotations of simple or highly complicated building structures are achieved quickly through user defined formats.

Tri-Mate\textsuperscript{R} can be linked to TRI-DESIGN 3000\textsuperscript{R} to offer unrivalled flexibility in costing out complete building projects.

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<table>
<thead>
<tr>
<th>REVISION</th>
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</thead>
<tbody>
<tr>
<td>05/2002</td>
<td>3</td>
</tr>
</tbody>
</table>
Tri-CeilR is an innovative “industry first” ceiling layout, optimisation and costing program developed exclusively by International Truss Systems (Pty) Ltd.

The Tri-CeilR program offers the Tri-PlateR fabricator the ultimate flexibility in quick input and fully quantified output of all commonly used ceiling finishes and associated items.

Tri-CeilR is a user friendly option in the significant suite of programs offered by International Truss Systems (Pty) Ltd, and as such is a fully interactive program offering the user full flexibility in his choice of materials, costs and layouts.

Editing of items or changes in client requirements are fully catered for and a simple change of parent ceiling covering produces an immediate change in the take off and costing of all associated fixings and covering materials.

Optimisation of standard lengths or sections is “the name of the game” and the user is able to define any combination of stock items available, to ensure that the highly professional quote is produced, using only “in-stock” items.

Optimisation and on screen editing allows maximum flexibility in producing cost effective and job winning quotations.

Tri-CeilR is only available to licensed Tri-PlateR fabricators.
TRI-PLATER PUNCHED METAL CONNECTORS

APPLICATION

TRI-PLATER® punched metal connector plates are designed in strict accordance with local and international codes of practice to provide sound structural timber to timber connections for the prefabricated timber truss and associated industries.

TRI-PLATER® punched metal connector plates are manufactured in a range of sizes to provide the most cost effective structural joints in prefabricated timber roof trusses.

FIXING

TRI-PLATER® punched metal connector plates are either hydraulically pressed or mechanically rolled into the timber joints, and the design ensures an effective spread of design load in the joints with extremely high resistance to “pull out” and metal shear.

SAFE WORKING LOADS

Design values are available from the I.T.S. Timber Engineering Consultancy on request.

PRODUCT CODE

See next page.
Sizes shown are the standard range, we can manufacture other sizes of plates upon request.

STEEL SPECIFICATION

Steel Grade: ASTM653 SQG 255.
Steel Thickness: 1mm. Rolling Tolerance: ± 0.09mm.
Weight used for calculation purpose: 8.117 kg/m2.
Area of steel per 25 kg of product used for calculation: 3.08 m2.

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# TRI-PLATE PUNCHED METAL CONNECTOR PLATES

<table>
<thead>
<tr>
<th>PRODUCT CODE</th>
<th>PLATE breadth x length mm x mm</th>
<th>APPROX PLATES / BOX</th>
<th>WEIGHT PER BOX</th>
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<tbody>
<tr>
<td>TA3</td>
<td>50 x 75</td>
<td>821</td>
<td>25kg</td>
</tr>
<tr>
<td>TA4</td>
<td>50 x 100</td>
<td>615</td>
<td>25kg</td>
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<tr>
<td>TB2</td>
<td>75 x 100</td>
<td>410</td>
<td>25kg</td>
</tr>
<tr>
<td>TB4</td>
<td>75 x 150</td>
<td>274</td>
<td>25kg</td>
</tr>
<tr>
<td>TB6</td>
<td>75 x 200</td>
<td>205</td>
<td>25kg</td>
</tr>
<tr>
<td>TB8</td>
<td>75 x 400</td>
<td>103</td>
<td>25kg</td>
</tr>
<tr>
<td>TC2</td>
<td>100 x 100</td>
<td>308</td>
<td>25kg</td>
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<tr>
<td>TC4</td>
<td>100 x 150</td>
<td>205</td>
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<td>TC9</td>
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<td>TC10</td>
<td>100 x 500</td>
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<td>TD10</td>
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</tr>
<tr>
<td>TE4</td>
<td>200 x 400</td>
<td>38</td>
<td>25kg</td>
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<table>
<thead>
<tr>
<th>BAR STOCK</th>
<th>SIZE</th>
<th>LENGTHS PER BUNDLE</th>
<th>WEIGHT PER BUNDLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ1</td>
<td>75 x 1500</td>
<td>10</td>
<td>9.13kg</td>
</tr>
<tr>
<td>TZ2</td>
<td>100 x 1500</td>
<td>10</td>
<td>12.18kg</td>
</tr>
<tr>
<td>TZ3</td>
<td>150 x 1500</td>
<td>10</td>
<td>18.26kg</td>
</tr>
<tr>
<td>TZ4</td>
<td>200 x 1500</td>
<td>10</td>
<td>24.35kg</td>
</tr>
</tbody>
</table>

International Truss Systems (Pty) Ltd policy is to constantly improve all products. In line with our policy, information on this document is subject to change without notice. For further information on the products please contact International Truss Systems (Pty) Ltd.
TRI-FIX\textsuperscript{R} MINI-HANGERS are manufactured by International Truss Systems (Pty) Ltd to cater for lightly loaded trusses and timber joists.

**FIXING**

TRI-FIX\textsuperscript{R} MINI-HANGERS are designed to be fixed with 32mm galvanised clout nails and 2 6mm bolts.

**SAFE WORKING LOADS**

2.2kN fully nailed.

**PRODUCT CODE**

UH 10
APPLICATION

TRI-FIXR 90° TRUSS HANGERS are specifically designed to support truss-to-girder and girder-to-girder connections in prefabricated timber roof structures.

TRI-FIXR 90° TRUSS HANGERS can also be used for truss or girder to concrete or masonry connections as well as timber joist and rafter supports.

A UNIQUE bottom chord “temporary fixing spike” provides UNRIVALLED ease in installation.

FIXING

TRI-FIXR 90° TRUSS HANGERS are fixed using conventional galvanised clout nails or may be bolted using M12 bolts and TRI-FIXR STRUCTURAL TIMBER WASHERS, or rawl bolts for masonry connections.

SAFE WORKING LOADS

4.2 kN fully nailed.
5.8 kN – nailed and bolted using M12 bolts and single sided shear connectors both sides with TRI- FIXR STRUCTURAL TIMBER WASHERS.

PRODUCT CODE

UH 12
TRI-FIX® 50 / 80 “U” TYPE HANGERS

APPLICATION

TRI-FIX® 50 / 80 “U” TYPE HANGERS are manufactured to cater for 48mm and 76mm widths of prefabricated timber roof trusses.

The UNIQUE design of the TRI-FIX® 50 / 80 “U” TYPE HANGERS features a temporary fixing “spike” as well as adjustable height supporting flanges which significantly improve resistance to hanger rotation.

FIXING

TRI-FIX® 50 / 80 “U” TYPE HANGERS are designed to be fixed with 5 X 12mm bolts or fully nailed with 32mm galvanised clout nails.

SAFE WORKING LOADS

5.3 kN – fully nailed and bolted with 5 x 12mm bolts and with TRI- FIX® STRUCTURAL TIMBER WASHERS.

PRODUCT CODE

UH 50 / 80

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TRI-FIX® 45° TRUSS HANGERS

APPLICATION

TRI-FIX® 45° TRUSS HANGERS are specifically designed to provide structurally adequate support for all 45° hip girder, hip truss and jack connections.

TRI-FIX® 45° TRUSS HANGERS are manufactured with a UNIQUE bottom cord “fixing spike”, which when fully nailed, provides additional restraint to the diagonal tension forces common in this type of application.

FIXING

TRI-FIX® 45° TRUSS HANGERS can be fixed using either conventional galvanised clout nails or 12mm bolts with TRI-FIX® STRUCTURAL TIMBER WASHERS.

SAFE WORKING LOADS

3kN - fully nailed 4.5 kN - bolted using M12 bolts and TRI-FIX® STRUCTURAL TIMBER WASHERS. These values have been devalued to suit site conditions and tolerances.

PRODUCT CODE

TH 45 L  (Left)
TH 45 R  (Right)

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TRI-FIX® HURRICANE CLIPS

APPLICATION

TRI-FIX® HURRICANE CLIPS are designed for general timber connections, where the members cross each other or meet at 90° angles. Common applications are purlins to trusses, truss rafters to wall plates, bracing, fixing and even light weight joist connections.

FIXING

TRI-FIX® HURRICANE CLIPS are fixed with 10 x 32mm galvanised clout nails. A unique temporary fixing “spike” is provided to facilitate easy temporary installation (prior to nailing).

SAFE WORKING LOADS

1,5 fully nailed (per clip)

PRODUCT CODE

HCL 1 (Left)
HCR 1 (Right)
APPLICATION

The TRI-FIX® TRUSS CLIP is designed as a general purpose connector where members cross each other at right angles. Common applications include purlins to rafters, bracing etc. The TRI-FIX® TRUSS CLIPS are particularly useful as additional means of fixing trusses to the wall plates where hoop irons have been misaligned. TRUSS CLIPS may be used to provide transverse restraint to trusses over non-load bearing internal walls without restricting vertical movement due to loading of roof.

TRI-FIX® TRUSS CLIPS can also be used in shelf support details on top chord bracing to connect the “blocking piece” to the trusses without having to use a hurricane clip.

FIXING

TRI-FIX® TRUSS CLIPS are fixed with 7 x 32mm galvanised clout nails in the base and with 32mm galvanised clout nails in the slotted holes, where allowance for vertical movement is required, or alternatively with nails in all holes and slots for full fixity.

PRODUCT CODE

TC01
TRI-FIX® SWING FIX: PURLIN TO RAFTER CONNECTOR

APPLICATION

The TRI-FIX® SWING FIX CLIP is designed for fixing 38 x 76/50 x 76/76 x 76 purlins in an upright or sideways position to beams or trusses. It provides positive anchorage against uplift and lateral loads. The recommended application is a minimum of one SWING FIX CLIP and one 125mm wire nail driven vertically at each purlin/rafter connection. In addition, two SWING FIX CLIPS and one 125mm nail must be used in braced bays. In overhang areas two pairs of SWING FIX CLIPS (4) are recommended due to higher wind uplift forces.

Comparative tests conducted by the SABS show that the average uplift resistance of the SWING FIX CLIP assembly is nearly twice that of the conventional nailing with skew nails.

FIXING

The TRI-FIX® SWING FIX CLIPS offer substantial time and labour saving over similar devices. The SWING FIX spikes are simply hammered home using a conventional claw hammer.

SAFE WORKING LOADS

1 SWING FIX CLIP and 1 x 125mm nail 0,7 kN
2 SWING FIX CLIPS and 1 x 125mm nail 1,3 kN
4 SWING FIX CLIPS and 1 x 125mm nail 2,5 kN
2 SWING FIX CLIPS and 2 TRI-FIX® HURRICANE CLIPS 2,5 kN

PRODUCT CODE

SF01
TRI-FIX® STRUCTURAL TIMBER WASHERS

APPLICATION

TRI-FIX® STRUCTURAL TIMBER WASHERS are manufactured by International Truss Systems (Pty) Ltd to meet the requirements of SABS 0163 and SABS 0243 which require that all multiple ply girders are bolted together at the node points.

TRI-FIX® STRUCTURAL TIMBER WASHERS should also be used in all other applications that require bolts such as topchord bracing shelf to wallplate support connections and the addition of “scab” members to highly stressed bays.

FIXING

2 TRI-FIX® STRUCTURAL TIMBER WASHERS should be used for every 12mm bolted connection.

PRODUCT CODE

SW01

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APPLICATION

TRI-FIXR GLIDE SHOE has been specifically designed to cater for the specific requirements of scissors and top chord supported trusses, whilst providing the ultimate in ease of installation.

For the characteristic horizontal deflection of more than 25mm trusses are easily and safely catered for, whilst providing free lateral movement and vertical restraint to ensure structural stability.

FIXING

The TRI-FIXR GLIDE SHOE “base” is simply hammered into the wall plate at the appropriate truss spacings to ensure fixity of the base.

TRI-NAILR SITE APPLICATION PLATE “runner” is then hammered into the underside of the supported chord at the appropriate bearing point.

The “runner” then glides on the P.T.F.E. strip which is bonded to the “base”.

PRODUCT CODE

GS01

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TRI-FIX® BATTEN SPLICE

APPLICATION

TRI-FIX® BATTEN SPLICES are specifically manufactured by International Truss Systems (Pty) Ltd to provide sound structural connections for battens and purlins, and are SABS approved.

They are designed for use in converting “shorts” to “longs” and for the recovery of waste and off cuts in a factory environment.

TRI-FIX® BATTEN SPLICES are manufactured in 32 x 150 size to meet all the requirements of commonly used truss spacings and batten sizes.

FIXING

TRI-FIX® BATTEN SPLICES are either pressed home using hydraulic presses or mechanically rolled in after temporary placing with a claw hammer.

PRODUCT CODE

BS02
TRI-FIX® ADJUSTABLE POLE HANGERS

APPLICATION

TRI-FIX® ADJUSTABLE POLE HANGERS are manufactured to provide a sound, attractive fixing for a gum pole with a diameter of 100mm to 150mm.

FIXING

TRI-FIX® ADJUSTABLE POLE HANGERS are designed to be fixed to the supporting structure with 2 x 10mm bolts and nail holes are provided in the supporting legs to restrain the pole.

SAFE WORKING LOADS

Safe working loads will depend upon the size of bolt and the supporting material i.e. timber, concrete masonry.

Safe working loads should be determined by an engineer or designs can be made available upon written request from the I.T.S. Timber Engineering Consultancy.

PRODUCT CODE

PH01
TRI-FIX® MULTI-PURPOSE BRACKETS

APPLICATION

TRI-FIX® MULTI-PURPOSE BRACKETS are manufactured by International Truss Systems (Pty) Ltd to meet the needs of the D.I.Y. market.

They are specifically designed for a wide range of applications in the structural timber market and general building industry.

FIXING

TRI-FIX® MULTI-PURPOSE BRACKETS are designed to be fixed with 8, 10 and 12mm bolts depending upon the application and type of bracket used.

SAFE WORKING LOADS

<table>
<thead>
<tr>
<th>NOMINAL BOLT DIAMETER (mm)</th>
<th>BASIC FORCE (S.W.L.) PER BOLT (kN)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4 &amp; 5</td>
</tr>
<tr>
<td></td>
<td>// to grain</td>
</tr>
<tr>
<td>8</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>1,9</td>
</tr>
<tr>
<td>12</td>
<td>2,7</td>
</tr>
</tbody>
</table>

Safe working loads (S.W.L.) will depend on the application, type of bracket and size of bolt used.

The following table extracted from SABS 0163 is given for reference and all structures with high risk factor should be checked by a Professional Engineer.

The International Truss Systems (Pty) Ltd Timber Engineering Consultancy can provide designs on written request.

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APPLICATION

TRI-FIX® HEAVY DUTY CLEATS are manufactured exclusively by International Truss Systems (Pty) Ltd to offer a cost effective and professionally engineered solution for the support requirements of the timber roof truss industry.

FIXING

TRI-FIX® HEAVY DUTY CLEATS are designed to be used with 12mm diameter bolts and TRI-FIX® STRUCTURAL TIMBER WASHERS on the back face.

Every cleat is manufactured with holes in the horizontal leg to ensure the correct and safe installation of timber blocking pieces to provide adequate lateral restraint to the connection. Support requirements for heavier loads can be designed and supplied by International Truss Systems (Pty) Ltd when required.

SAFE WORKING LOADS

<table>
<thead>
<tr>
<th>PRODUCT CODE</th>
<th>UNIT WEIGHT (kg)</th>
<th>S.W.L. IN kN GRADE 4</th>
<th>MINIMUM VERTICAL WEB SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDC 1</td>
<td>2,5</td>
<td>7</td>
<td>-</td>
</tr>
<tr>
<td>HDC 2</td>
<td>3,6</td>
<td>16</td>
<td>111</td>
</tr>
<tr>
<td>HDC 3</td>
<td>4,1</td>
<td>20</td>
<td>111</td>
</tr>
<tr>
<td>HDC 4</td>
<td>4,5</td>
<td>30</td>
<td>149</td>
</tr>
<tr>
<td>H45º V5 P2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H45º V8 P2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H45º V12 P2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PRODUCT CODE

HDC 01, 02, 03, 04, H45+ (V5, V8, V12)

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TRI-FIX\textsuperscript{R} TRI-STRAP

APPLICATION

TRI-FIX\textsuperscript{R} TRI-STRAP is a pre-punched galvanised coil strip which is used in a variety of holding down, tying and bracing applications. Its most common applications are:

(i) Holding down strap either built in or bolted to walls and beams at truss heel/wallplate intersections.
(ii) Truss to girder or girder to girder web tie connections.
(iii) Attic bracing where conventional timber bracing interferes in the roof space.
(iv) Cross bracing of timber frame housing, roofs and garage doors.
(v) Rafter and gum pole structure bracing and ties.

FIXING

TRI-FIX\textsuperscript{R} TRI-STRAP is produced with a row of centrally punched holes for quick and easily nailed connections to the timber structure whilst maximising edge distance and the associated failures of “edge tearing” in thin material.

TRI-FIX\textsuperscript{R} TRI-STRAP is unique in that it has a 7mm diameter hole every 100mm to accommodate a 6mm bolt for positive long-term tension and minimum creep or slip. 3.5mm diameter nail holes are provided at 25mm centres for alternate strap to timber connections.

SAFE WORKING LOADS

TRI-FIX\textsuperscript{R} TRI-STRAP has a Safe Working Load (S.W.L) of 3.8 kN.

PRODUCT CODE

TS01

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TRI-NAIL® SITE APPLICATION PLATES

APPLICATION

TRI-NAIL® SITE APPLICATION PLATES are manufactured by International Truss Systems (Pty) Ltd in 1mm galvanised steel coil to enhance the significant range of TRI-PLATER® punched metal connector plates used in prefabricated “factory” manufacture.

The TRI-NAIL® range of SITE APPLICATION PLATES are specifically produced to offer the benefits of “monoplanar” timber truss manufacture in rural or remote areas where electricity and hydraulically operated equipment is not available.

FIXING

NO POWER or MECHANICAL equipment is needed. The individual nails are simply driven into the timber using a conventional claw hammer and in strict accordance with the guidelines and specifications given in the I.T.S. (Pty) Ltd Technical Reference Manual – THE USE AND APPLICATION OF TRI-NAIL SITE APPLICATION PLATES.

SAFE WORKING LOADS

TRI-FIX® SITE APPLICATION PLATES have been fully tested by the C.S.I.R. and full design information is available from the I.T.S. Timber Engineering Consultancy. Specially prepared charts giving load/span/truss tables are also available on request.

PRODUCT CODE

See next page.

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## TRI-NAIL RANGE OF 1mm SITE APPLICATION PLATES

<table>
<thead>
<tr>
<th>PRODUCT CODE</th>
<th>PLATE SIZE</th>
<th>APPROX NO. PER BOX</th>
</tr>
</thead>
<tbody>
<tr>
<td>TNA 1</td>
<td>50 x 96 mm</td>
<td>648</td>
</tr>
<tr>
<td>TNA 2</td>
<td>50 x 160 mm</td>
<td>389</td>
</tr>
<tr>
<td>TNA 5</td>
<td>75 x 128 mm</td>
<td>324</td>
</tr>
<tr>
<td>TNA 6</td>
<td>75 x 192 mm</td>
<td>216</td>
</tr>
<tr>
<td>TNA 7</td>
<td>75 x 224 mm</td>
<td>185</td>
</tr>
<tr>
<td>TNB 1</td>
<td>100 x 96 mm</td>
<td>324</td>
</tr>
<tr>
<td>TNB 2</td>
<td>100 x 160 mm</td>
<td>194</td>
</tr>
<tr>
<td>TNB 3</td>
<td>100 x 192 mm</td>
<td>162</td>
</tr>
<tr>
<td>TNB 4</td>
<td>100 x 256 mm</td>
<td>121</td>
</tr>
<tr>
<td>TNB 5</td>
<td>100 x 320 mm</td>
<td>97</td>
</tr>
<tr>
<td>TNC 1</td>
<td>150 x 160 mm</td>
<td>130</td>
</tr>
<tr>
<td>TNC 2</td>
<td>150 x 192 mm</td>
<td>108</td>
</tr>
<tr>
<td>TNC 3</td>
<td>150 x 256 mm</td>
<td>81</td>
</tr>
<tr>
<td>TNC 4</td>
<td>150 x 320 mm</td>
<td>65</td>
</tr>
<tr>
<td>TNC 5</td>
<td>150 x 416 mm</td>
<td>50</td>
</tr>
</tbody>
</table>

TRI-NAIL is packed in 25kg boxes.

---

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APPLICATION

TRI-FIX® ANTI-SPLIT PLATES for timber boards and poles are designed for easy insertion into end grain of timber. Anti-Split plates will provide maximum protection against end splitting of timber.

TRI-FIX® Anti-Split punched metal plates are manufactured in a range of sizes to provide the most cost effective cover area.

FIXING

TRI-FIX® Anti-Split punched metal plates are either hydraulically pressed or hammered into the timber or pole ends. Anti-Split plates provide an extremely high resistance to “pull out”.

PRODUCT CODE

See next page.
Sizes shown are the standard range, we can manufacture other sizes of plates upon request.

STEEL SPECIFICATION

Steel Thickness: 1.2mm. Rolling Tolerance: ± 0.09mm.
Weight used for calculation purpose: 9.7404 kg/m2.
Area of steel per 25 kg of product used for calculation: 2.5664 m2.
### 1.2mm thk. TRI-FIX® Anti-Split punched metal plates

<table>
<thead>
<tr>
<th>Code</th>
<th>Plate size</th>
<th>For Use</th>
<th>Approx. qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA1</td>
<td>20x40</td>
<td>Timber boards 45-54</td>
<td>3208 Per box</td>
</tr>
<tr>
<td>ASA2</td>
<td>20x100</td>
<td>Pole diam. 38x114</td>
<td>1283</td>
</tr>
<tr>
<td>ASA3</td>
<td>20x120</td>
<td></td>
<td>1069</td>
</tr>
<tr>
<td>ASA4</td>
<td>20x140</td>
<td></td>
<td>917</td>
</tr>
<tr>
<td>ASA5</td>
<td>20x180</td>
<td></td>
<td>713</td>
</tr>
<tr>
<td>ASA6</td>
<td>20x200</td>
<td></td>
<td>642</td>
</tr>
<tr>
<td>ASB1</td>
<td>40x40</td>
<td>50-75</td>
<td>1604</td>
</tr>
<tr>
<td>ASB2</td>
<td>40x60</td>
<td>75-100</td>
<td>1069</td>
</tr>
<tr>
<td>ASB3</td>
<td>40x80</td>
<td>75-100</td>
<td>802</td>
</tr>
<tr>
<td>ASB4</td>
<td>40x100</td>
<td>50x152</td>
<td>642</td>
</tr>
<tr>
<td>ASB5</td>
<td>40x180</td>
<td>50x200</td>
<td>356</td>
</tr>
<tr>
<td>ASB6</td>
<td>40x200</td>
<td>50x228</td>
<td>321</td>
</tr>
<tr>
<td>ASC1</td>
<td>80x60</td>
<td>100-125</td>
<td>535</td>
</tr>
<tr>
<td>ASC2</td>
<td>80x80</td>
<td>125-150</td>
<td>401</td>
</tr>
<tr>
<td>ASD1</td>
<td>120x80</td>
<td>125-175</td>
<td>267</td>
</tr>
<tr>
<td>ASD2</td>
<td>120x100</td>
<td>150-200</td>
<td>214</td>
</tr>
<tr>
<td>ASD3</td>
<td>120x120</td>
<td>175-225</td>
<td>178</td>
</tr>
<tr>
<td>ASD4</td>
<td>120x160</td>
<td>200-225</td>
<td>134</td>
</tr>
<tr>
<td>ASE1</td>
<td>140x120</td>
<td>200-250</td>
<td>153</td>
</tr>
<tr>
<td>ASE2</td>
<td>140x140</td>
<td>200-275</td>
<td>131</td>
</tr>
</tbody>
</table>

**NB.**

SANS 457 and 1288 require coverage of 35% of cross sectional area on pole ends.

All nails to be fully embedded into poles and timber boards and restricted to one plate per end.

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TRI - JOIST

APPLICATION

TRI-JOIST® METAL WEBS are manufactured from galvanised steel coil and can be powder coated in various colours to suit special requirements.

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## TRI-JOIST Range of Metal Webs

<table>
<thead>
<tr>
<th>PRODUCT CODE</th>
<th>O / A DEPTH OF WEB</th>
<th>EFFECTIVE DEPTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>TJ 100V</td>
<td>197</td>
<td>125</td>
</tr>
<tr>
<td>TJ 100HL</td>
<td>197</td>
<td>125</td>
</tr>
<tr>
<td>TJ 100HR</td>
<td>197</td>
<td>125</td>
</tr>
<tr>
<td>TJ 150V</td>
<td>229</td>
<td>157</td>
</tr>
<tr>
<td>TJ 150HL</td>
<td>229</td>
<td>157</td>
</tr>
<tr>
<td>TJ 150HR</td>
<td>229</td>
<td>157</td>
</tr>
<tr>
<td>TJ 200V</td>
<td>279</td>
<td>207</td>
</tr>
<tr>
<td>TJ 200HL</td>
<td>279</td>
<td>207</td>
</tr>
<tr>
<td>TJ 200HR</td>
<td>279</td>
<td>207</td>
</tr>
<tr>
<td>TJ 300V</td>
<td>356</td>
<td>284</td>
</tr>
<tr>
<td>TJ 300HL</td>
<td>356</td>
<td>284</td>
</tr>
<tr>
<td>TJ 300HR</td>
<td>356</td>
<td>284</td>
</tr>
<tr>
<td>TJ 325V</td>
<td>396</td>
<td>324</td>
</tr>
<tr>
<td>TJ 325HL</td>
<td>396</td>
<td>324</td>
</tr>
<tr>
<td>TJ 325HR</td>
<td>396</td>
<td>324</td>
</tr>
</tbody>
</table>

V = Full Web  
HL = Half Web – Left  
HR = Half Web - Right

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APPLICATION

TRI-LUG® is manufactured from 1.6mm galvanised steel coil. TRI-LUG is used to anchor brickwork to concrete or steel columns.

FIXING

TRI-LUG is shot fixed with 3.7mm diameter pins into either steel or concrete, when fixed to the surface of a structure. It may also be cast during construction.

PRODUCT CODE

TL 01
APPLICATION

Utilise this patented product to manufacture timber trestles for a wide variety of uses ranging from scaffold support trestles to modern desks. Using 36 x 114 timbers and a hammer you can manufacture a trestle within minutes.

FIXING

Timber is inserted into the bracket and secured into position by using a hammer to tap on the built in claws causing them to bite into the timber.

PRODUCT CODE

SHB01

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<table>
<thead>
<tr>
<th>REVISION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/2002</td>
<td>26</td>
</tr>
</tbody>
</table>
**APPLICATION**

The roller is used in the rolling in of Tri-Plates in the manufacturing of trusses. This equipment is free of maintenance and has proved to be the most popular and widely used truss making press. It is very simple in its operation and is fitted with all the required safety switches and guards.

**SPECIFICATION**

Dimensions – Length / Width / Height = 5.6m / 1m / 1.5m. Maximum throat width – 4.5m. Maximum throat depth 150mm (Can be modified to users specifications). Weight 3500Kg.

Forward reverse switch.

Electrical power requirements – 3 Phase – 380 Volts – 15 Amp.
APPLICATION

Easy to set – easy to use double bladed web saw. The unique easy set / release clamps allows the quickest time change between blade angle settings. It has a 6-meter timber bed, which facilitates the cutting of webs as well as top and bottom chords.

450mm Blade Diameter - Specification

2 x 450mm diameter blades, Timber bed length – 6 meter.
Weight – 800 Kg. Cutting capacity of 22 pieces of 38mm wide timber per single bed travel.
Electrical requirements – 3 Phase, 380 Volt, 20 Amp.

750mm Blade Diameter - Specification

We also manufacture a 750mm double blade web saw to allow cutting of long scarf cuts into 225 deep timber. 2 x 750mm diameter blades, Cutting capacity of 22 pieces of 38mm wide timber per single bed travel.
Weight – 1500 Kg.
Floor space requirement – 4m x 6m, Timber bed length – 6 meter.
Electrical requirements – 3 Phase, 380 Volt, 35 Amp.

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**APPLICATION**

Versatile mobile single press head – can be utilized as splice press or stand alone press head. Ideal for top / bottom chord and batten splicing.

**Specification**

Solid base – 2 safety switches.
Weight – 500 Kg.
Electrical requirements – 3 Phase, 380 Volt, 15Amp. (220Volt -15 Amp Model also available)

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