SKIN FITTINGS

Designed and made in New Zealand, Tru-Design Skin Fittings are the superior composite thru-hull solution.



The Skin Fitting body and nut are moulded from glass fibre reinforced nylon composite. High strength, high-modulus glass fibres provide dramatic strength, stiffness, toughness and dimensional stability. These properties allow a significant weight reduction over metallic fittings.

Tru-Design Skin Fittings eliminate the corrosion and electrical bonding problems associated with metallic fittings.

Our Skin Fittings meet ISO International Standards giving added assurance of performance in the harsh marine environment.

MODELS

Part #	Description
90425	Skin Fitting ½" BSP White
90432	Skin Fitting ¾" BSP White
90423	Skin Fitting 1" BSP White
90421	Skin Fitting 1¼" BSP White
90419	Skin Fitting 1½" BSP White
90429	Skin Fitting 2" BSP White

Part #	Description
90737	Skin Fitting ½" NPS White
90738	Skin Fitting ¾" NPS White
90739	Skin Fitting 1" NPS White
90740	Skin Fitting 1¼" NPS White
90741	Skin Fitting 1½" NPS White
90742	Skin Fitting 2" NPS White

90424	Skin Fitting ½" BSP Black
90431	Skin Fitting ¾" BSP Black
90422	Skin Fitting 1" BSP Black
90420	Skin Fitting 1¼" BSP Black
90418	Skin Fitting 1½" BSP Black
90428	Skin Fitting 2" BSP Black

90719	Skin Fitting ½" NPS Black
90720	Skin Fitting ¾" NPS Black
90721	Skin Fitting 1" NPS Black
90722	Skin Fitting 1¼" NPS Black
90723	Skin Fitting 1½" NPS Black
90724	Skin Fitting 2" NPS Black



STANDARDS

Tru Design Skin Fittings are certified by the International Marine Certification Institute (IMCI) to meet;

ISO 9093-2 Small craft -- Seacocks and through-hull fittings -- Part 2: Non-metallic
*Note – ½" Skin Fittings do not meet ISO 9093-2





In meeting ISO 9093-2, our skin fittings have been tested with a 155kg load hanging off a ball valve and hose fitting as shown.

Bureau Veritas – as of August 28, 2012 Tru Design have Bureau Veritas Marine Division Approval (certificate #27801/A0 BV) for Skin Fittings, Ball Valves, and Aquavalves. This covers the commercial marine market whereas IMCI (above) covers the recreational market.




TYPE APPROVAL CERTIFICATE

TRUDESIGN

SEACOCKS / THROUGH-HULL FITTINGS

KEY FEATURES

Feature :	
Manufactured from a glass reinforced nylon composite	High strength and light weight.
Compatible with all hull types	Can be used on aluminum, steel, wood or GRP hulls.
Immune to corrosion and electrolysis	Long life with no concerns over decreased performance due to corrosion.
Chemical resistant	Impervious to diesel, petrol and antifouling paints.
UV resistant	These fittings will not break down with ultraviolet light or discolour from the sun.
High quality surface finish	Will not discolour with green film as similar bronze fittings do.
Paintable	Can be painted with all types of antifouling. Antifouling paint stays adhered to the skin fitting, alleviating the chore of grinding and cleaning back flaked paint from bronze fittings before applying antifouling.
Fits Tru-Design Ball Valves & BSPP threads	Universal compatibility to other Tru-Design fittings, and other marine components.
Large operating temperature range	Suitable for all marine environments, from -20°C to +110°C.
Supplied in individual plastic bags with header card and information sheet	Header card states IMCI Certification, size of hose tail and comes with instructions in the bag as per IMCI regulations.

SPECIFICATIONS

HULL COMPATIBILITY

The Tru-Design Skin Fittings are suitable for installation in all types of hull construction; steel, aluminium, fibreglass - cored and solid, wooden sandwich.

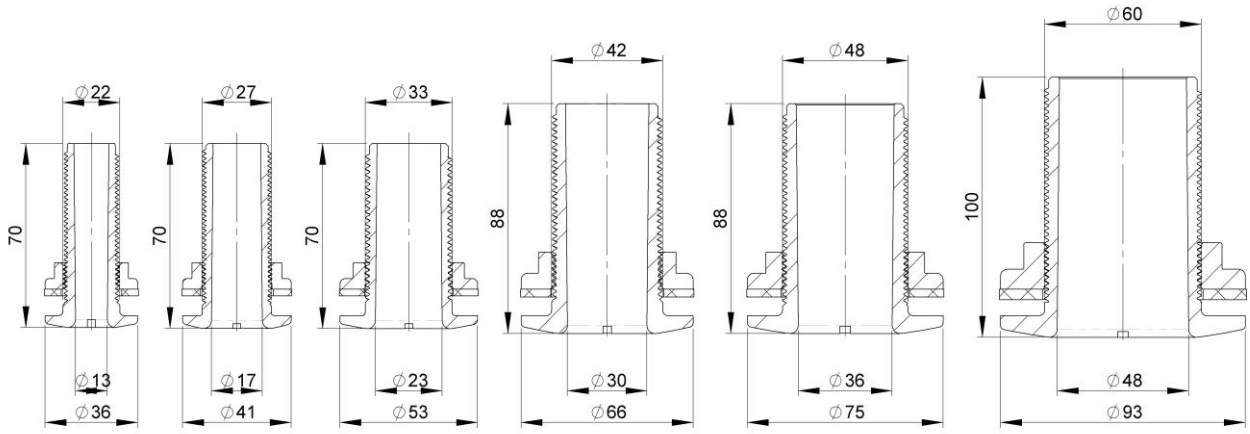
Tru-Design Skin Fittings are also able to be used on caulked solid wood hulls – care should be taken to only locate the skin fitting in the centre of any individual plank.

FLOW DIAMETER & HULL THICKNESS

Size	Minimum I.D.	Maximum Hull Thickness
½" BSP	12mm	28mm
¾" BSP	17mm	28mm
1" BSP	23mm	28mm
1¼" BSP	30mm	30mm
1½" BSP	36mm	30mm
2" BSP	48mm	40mm

DIMENSIONS

All dimensions in mm.
All dimensions nominal.



INSTALLATION

Full installation instructions are supplied with the Skin Fitting.

Location & Drilling:

Ensure there is sufficient room on the inside of the boat to allow the Ball Valve to be screwed onto the Skin Fitting without hitting the bulkhead or other part of the hull. Also ensure it is located where no inadvertent opening or closing of the valve can occur.

Mark the location. Drill from the inside a pilot hole 3mm in diameter.

Select a hole-saw 1mm larger than the outside diameter of the thread diameter on the skin fitting. From the inside, use the pilot hole as a centre and drill through the hull with selected hole-saw.

Sealant:

Tru Design suggest using Epoxy-West system or similar two pot epoxy that mixes to a paste and not a liquid type resin, as this will run and will create an undesirable finish.

Tip – adding powder to the West System will help minimize “running” of the epoxy.

Fitting:

Smear the epoxy paste on the underside of the skin fitting flange and a small way up the threaded diameter but no further than the thickness of the hull. It is important not to have any epoxy on the exposed thread area.

Insert the skin fitting through the hull from the outside. The easiest way of holding the skin fitting is to insert one or two fingers inside the fitting then offer it up to the hole. The paste should be thick enough to hold the fitting in place and not drip or run down the hull. Go inside the hull to fit the lock nut.

If there is a large gap between the hole in the hull and the skin fitting carefully fill this gap with more epoxy paste. Again ensure there is no epoxy on the exposed part of the thread. Drop the washer over the top of the thread and push to the hull. (Note: For excessive curvature in the hull a suitable curved packer should be fitted between the hull and the washer.) Now hold the thread down near the washer and screw on the lock nut.

Once the nut is screwed down far enough so you can hold the fitting above it do so and continue to screw the nut down onto the washer ensuring it is only finger tight. On the outside of the hull clean off any excess epoxy.

Tip - Use an angled tool or putty knife to fill the small recess around the outside of the skin fitting head and the hull so it is easier to clean when sanding and antifouling in the future.

After recommended curing time tighten the nut to about 15ftlb.

There is no need to over tighten the locking nut as the epoxy has now made the skin fitting an integral part of the hull and will last the life of the vessel.

Thread Sealant Methods:

Teflon tape: Teflon tape is a traditional method which provides a good seal when applied correctly, however in some cases if the position or tightness of the Ball Valve or Skin Fitting is incorrect, it has to be unscrewed and more tape applied, slowing the construction process. Additionally, the fitting can sometimes be turned by hand after being installed.

Sikaflex 291i: Takes approximately 2 hours to cure, then hoses can be attached. Full cure takes 24 hours. The Skin Fitting is not able to be turned after cure but can be undone with the use of a larger spanner. The nut does not crack open easily and has to be unscrewed the whole way by spanner which shows how well it has adhered and sealed the joint. Colour = Black.

3M Fast Cure 5200: Takes slightly less than 2 hours to cure, then hoses can be attached. Full cure takes 24 hours. The Skin Fitting is not able to be turned after cure but can be undone with the use of a larger spanner. The nut does not crack open easily and has to be unscrewed the whole way by spanner which shows how well it has adhered and sealed the joint. Colour = White.

Locktite 55 Thread Cord: This is a coated multifilament thread designed as a faster method than Teflon tape to seal threaded pipes and fittings. The main advantage is that a Ball Valve for example could be screwed down, then screwed back a turn to suit positioning whilst maintaining a tight seal. This eliminates the need to remove the entire Ball Valve and apply more tape as with traditional Teflon tape. Colour = White.

Instructions for Sikaflex 291i, 3M Fast Cure 5200, and Locktite 55 Thread Cord products are shown on their individual packaging.

TAPERED THREAD VS PARALLEL BSP THREAD

Note: Do not use with tapered thread valves or fittings.

The thread type on all Tru-Design Skin Fittings is a British Standard Pipe Parallel thread (BSPP). The thread is a mechanical fastening with sealing provided by tape or one of the above sealant methods. These methods give a secure mechanical joint between the Skin Fitting and connected components such as Ball Valves. A tapered thread cannot provide this strong connection. Mixing tapered and parallel threads can result in damage to either of the components.

BONDING

There is no need to tie/bond Tru-Design Skin Fittings electrically together as there are no corrosion or electrolysis problems as can be experienced when using bronze fittings.

SERVICING

As composite Skin Fittings are immune to corrosion, minimal servicing is required.

Skin fittings should be checked for secure fitting into the hull and to other fittings at regular intervals. Upon hauling out, the exterior of the fitting should be checked for damage.

If fittings are removed, the tape or sealant should be removed and replaced.

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