

## **Installation Guide**

Holds are based on unsaturated polyester resins, which are combined with mineral and other additives before moulding and curing to form strong durable products. Material formulations have been subjected to rigorous physical testing regimes, however, it is a combination of factors: materials selection, design (hold geometry), processing parameters and installation which determine fitness for purpose. We have evolved in-house standards which help ensure our products meet customers' criteria of ease of fixing, comfort in use and longevity. For example, all bolt-on and screw-on holds are oven post cured to make certain that full material properties are achieved prior to despatch. Hold bases are ground flat and a rubber backing applied as appropriate eg. to holds for masonry substrates. Bolt-on holds have through holes and moulded recesses to accept M10 socket head bolts either countersunk (CSK) or cap head which can be supplied with holds. Screw-on holds have two or more countersunk holes for woodscrews which are supplied with holds as standard.

### **Fixing holds**

#### **Bolt-on holds to ply boards using T-nuts**

This is the preferred option where boards pre-fitted with T-nuts are mounted on a suitable support structure, allowing rapid changes of hold positions and introduction of new holds. A T-nut is a flanged internally threaded steel sleeve. The flange has 4 inward facing prongs which secures it to the back of the board (normally 18mm thick) and presents the thread recessed within the board ready for the bolt. They are relatively inexpensive so it is a good idea to put in plenty of spares. First drill clean 12mm holes squarely through board. Hammer in T-nuts to back of board; this is best done with board laid flat on a non-springy surface. Then for best results go round each nut and tighten from the front using a short bolt and large washer. This pulls the nut fully home and sets it squarely, it is then much less likely to be poked out when offering up a bolt. To mount a hold, thread correct M10 bolt through hold (CSK or cap of sufficient length) and carefully engage threads. Tighten with an Allen key (6mm for CSK or 8mm for caphead). Avoid over-tightening eg. by use of extension tubes on Allen key, this is unnecessary and could in extreme cases damage the hold. Test by hand to ensure hold is firmly secured. In some cases elongated holds have an additional fixing point for a woodscrew. A surface finish can also be applied to provide friction for feet and improve aesthetics (details on request).

#### **Screw-on holds to ply and timber**

This is simple and can be easily accomplished with hand tools. Make pilot holes to facilitate screw driving (approx 3mm) using a bradawl or similar. Mount hold in desired position with first screw sufficiently tight to spot remaining hole(s). Slacken screw before engaging remaining screws. Bring screws fully home by gradually tightening each in turn to avoid "tipping". Twin thread "Posidrive" screws are provided with holds.

#### **Bolt-on holds to masonry**

This is common but there is more to consider and it is difficult to generalise as materials of construction vary considerably. You must ensure your wall is structurally sound, if in doubt seek professional guidance from a structural engineer.

Essentially fixings are of two types, one relying on a resin bonded anchor and the second mechanical expansion. The former is undoubtedly the preferred option, where an internally threaded steel sleeve is bonded flush with the wall surface using a resin mortar applied with a cartridge gun. This provides permanent anchors in solid, sound masonry, which can be re-used time and again. They can also be used in certain hollow bricks/blocks with the aid of an expanding net or wire mesh.

Expansion devices such as hammer set sleeves are often used. These provide a relatively short anchorage length and should only be used in dense solid substrates.

Shield anchors can also be used successfully but here we recommend use of our caphead fitting holds which feature a near constant depth under the washer.

Details of masonry fixings are available on request. Whatever method you choose you will require accurate, clean holes drilled perpendicular to the wall surface (a drill guide can be useful here). Resin bonded sleeves in particular are “unforgiving”, if you set them wrongly they can be unusable or cause damage to the hold.

Rubber backing of holds is recommended for masonry. This irons out small irregularities in the surface. We do not advise the application of holds to very irregular stonework or the bridging of poorly aligned bricks/blocks as this could result in flexural failure of the hold.

#### **Screw-on holds to masonry**

Whilst designed for use on ply boards or timber, screw-on holds are used on masonry but should be confined to low level traverse walls. Ensure hold is well within a single brick/block away from the edge. Avoid very thin or elongated patterns, we recommend holds in the mid-range **MA-XLB**. “Plasplugs” colour brown are normally sufficient which can be supplied on request.

#### **CAUTION**

**Climbing is potentially dangerous and whilst every effort has been made to ensure the reliability of Holdfast products, the user must ensure his/her own safety or those in their charge.**