

Installation Instructions

MODEL BT24 BR – BARIATRIC GRAB RAIL

AS1428. Compliant



Description:

A lightweight operation foldup grab rail which takes a dynamic load of 300kgs. Lock in the “up” position. Exceeds the requirements of AS1428.1 as a folding grab rail.

Materials:

304 Grade Satin Stainless Steel tubing.

Specification:

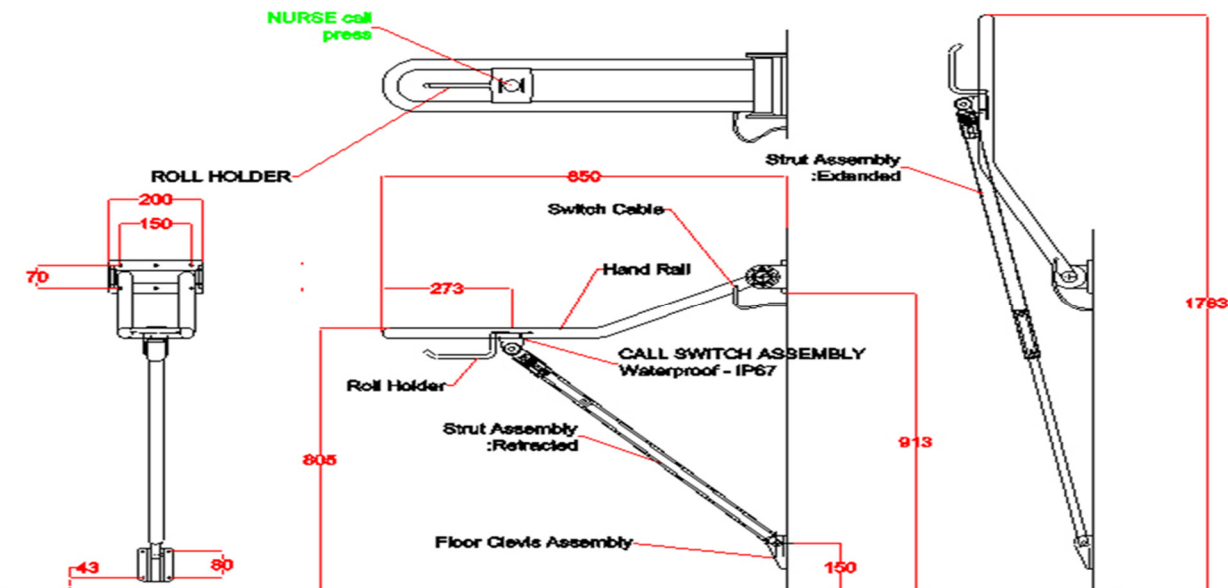
Extends 850mm off wall. Designed and Engineered for maximum strength when fixed to F17 constructed.

Finishes Available:

32mm diameter tube. Mirror Polishing (No. 9 Finish)

Models:

- BT24BR – 32mm WC Fold Down Bariatric Grab Rail
- BT24BR TR - 32mm WC Fold Down Bariatric Grab Rail, including Toilet Roll Holder
- BT24BR TR NCP - 32mm WC Fold Down Bariatric Grab Rail, including Toilet Roll Holder and Nurse Call



It is very important that a spacing block is utilised behind the rail to ensure that the rail is parallel to the wall surface as wall surfaces and squareness can vary. This can be adjusted on installation by an experienced tradesperson. The wall to the inside of the rail is 55mm on standard Bendtech Rails.

Note: To the extent permitted by law Bendtech does not provide any warranty in relation to bolts, screws or other fasteners provided with Bendtech products. You should obtain appropriate advice from a licensed trade person before affixing or installing.

BUILDEX 03103-PDS | 10-12 HEX WASHER TYPE 17 | BUILDEX SCREWS | WWW.BUILDEX.COM.AU

Application: BuildexA10-12 Hex Washer Type 17 is designed for a variety of applications for fixing to timbers - fencing - furniture - pergolas and side cladding.

Drilling Capacity: Timber F7 to F27

Installation Instructions:

1. Use a 5/16 Driver Bit (Buildex A Part Number 1-991-1366-9).
2. Use a mains powered or cordless screw driver with a 2,600 RPM speed.
3. Fit the Driver Bit into the screw and place at the fastening position.
4. Apply consistently firm pressure (end load) to the screw driver until the screw has drilled and fastened.

Material: Carbon Steel SAE 1022

Heat Treatment: To AS 3566.1

Finish: Zinc Plate or ClimasealA3

Mechanical Properties: Single Shear Strength (N) 8,100 | Axial Tensile Strength (N) 9,400 | Torsion Strength (Nm) 7.3

Pullout Values:

20 mm Embedment: F5 (Pine) Timber (N) 3,000 | F8 Timber (N) 2,300 | F17 (Hardwood) Timber (N) 3,800

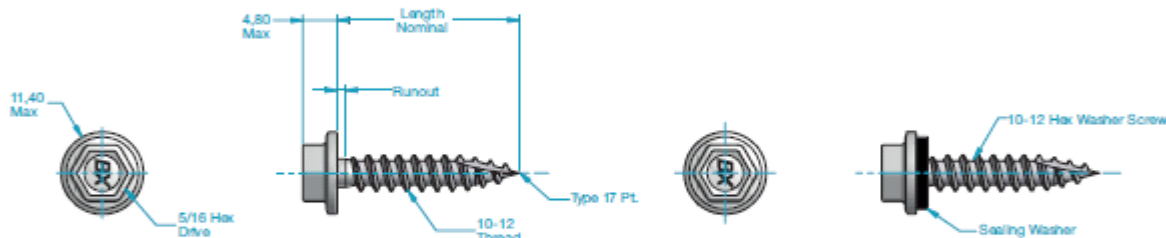
25 mm Embedment: F5 (Pine) Timber (N) 3,800 | F8 Timber (N) 3,600 | F17 (Hardwood) Timber (N) 5,200

30 mm Embedment: F5 (Pine) Timber (N) 3,800 | F8 Timber (N) 3,900 | F17 (Hardwood) Timber (N) 6,000

All values are averages obtained under laboratory conditions and appropriate safety factors should be applied for design purposes. *These figures are applicable to Buildex A head marked product only.*

Corrosion Performance: Buildex A 10-12 Hex Washer Type 17 with Climaseal A 3 finish complies to Australian Standards AS3566.2 Class 3 *Specify your corrosion performance requirements when ordering*

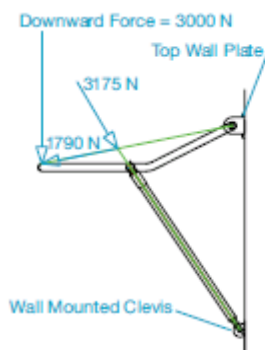
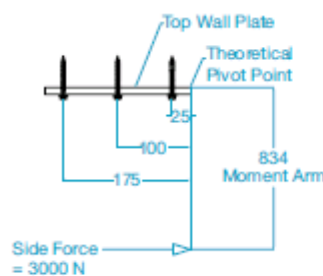
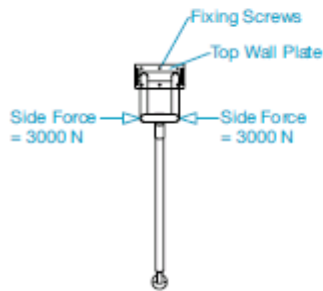
Part Number	Description	Pack Qty	Pallet Qty
6-031-0063-2CS	10-12 x 20 Hex Washer Type 17 Climaseal 3	1,000 / 4,000	288,000
6-030-0048-8CS	10-12 x 20 Hex Washer Type 17 with Neo Climaseal 3	1,000 / 3,000	216,000
6-031-0053-8CS	10-12 x 25 Hex Washer Type 17 Climaseal 3	1,000 / 3,000	216,000
6-030-0001-2CS	10-12 x 25 Hex Washer Type 17 with Neo Climaseal 3	1,000 / 3,000	216,000
6-031-0005-1CS	10-12 x 30 Hex Washer Type 17 Neo Climaseal 3	1,000 / 3,000	216,000
6-030-0068-7CS	10-12 x 30 Hex Washer Type 17 with Neo Climaseal 3	1,000 / 3,000	216,000



Description	Length	Runout
10-12 x 20 Hex Washer	T17 18.5 / 20.0	1.4 Max.
10-12 x 25 Hex Washer	T17 23.5 / 25.0	1.4 Max.
10-12 x 30 Hex Washer	T17 28.5 / 30.0	1.4 Max.



BARIATRIC GRAB RAIL (FOLD UP) COMPUTATIONS



1. Side Load on Fixing Screws

Assumptions:

1. The side force is applied at the further most part of the rail, 834mm from the wall;
 2. All of the side load is taken by top wall plate;
 3. The top wall plate is supported by 6 x 10-12 Type 17 Fixing Screws;
 4. All Fixing Screws are embedded minimum of 25mm into F17 Hardwood;
 5. From Buildex Data Sheet 03103-PD, pullout force = 5200Newtons
- Resisting Moment provided by Top Wall Plate attached by Fixing Screws into F17 hardwood. Resisting Moment = $(0.025 \times 5200 \times 2) + (0.100 \times 5200 \times 2) + (0.175 \times 5200 \times 2) = 3120 \text{ NM}$ Moment applied by 3000N force @834mm = $3000 \times 0.834 = 2502 \text{ NM}$

Conclusion: The Top Wall Plate using Buildex 10-12 Type 17 fixing screws into F17 hardwood is capable of supporting a 3000N side load applied at the furthest part of the rail, 834mm from the wall.

2. Downward Load on Fixing Screws

Assumptions:

1. The downward load is applied at the further most part of the rail, 834mm from the wall;
 2. The downward load is supported by both the Floor Mounted Clevis and the Top Wall Plate;
 3. The top wall plate is supported by 6 x 10-12 Type 17 Fixing Screws;
 4. All Fixing Screws are embedded minimum of 25mm into F17 Hardwood;
 5. From Buildex Data Sheet 03103-PD, pullout force = 5200Newtons.
- From the force diagram the pullout force on the Wall Plate is 1790Newtons 6 x Buildex 10-12 Type 17 Fixing Screws are able to support 31,200 Newtons

Conclusion: The Top Wall Plate using Buildex 10-12 Type 17 fixing screws into F17 hardwood is capable of supporting a 3000N downward load applied at the furthest part of the rail, 834mm from the wall.

Date compiled: 11/03/2014 By: Grant Delta B. Eng. (Mech)

