021

SAYFA SYSTEMS UK

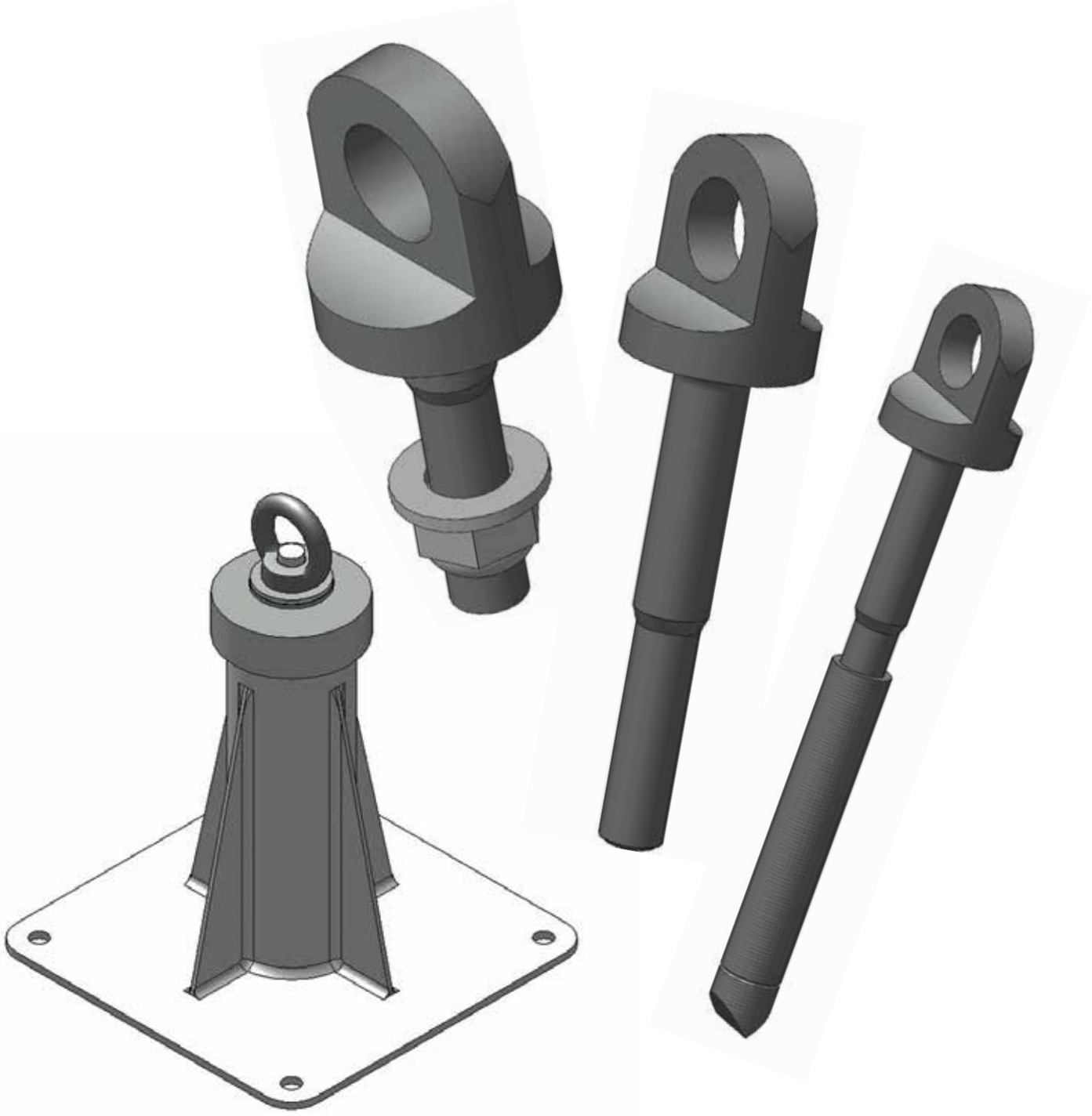
Aviator®

ABSEIL ANCHORS

PRODUCT DATA SHEET
REPORT NO: 021

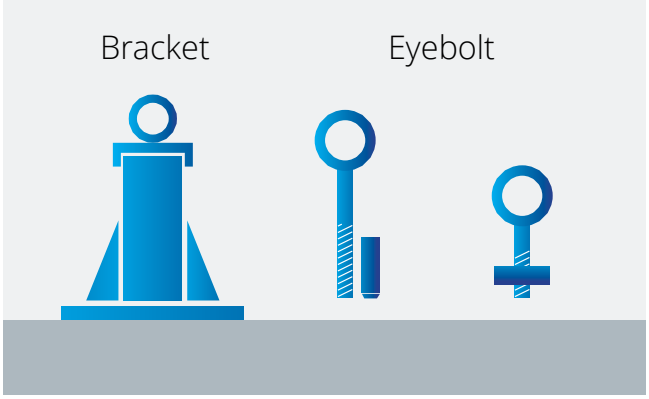
REVISION NO: 002

PRODUCT CODE: AB300

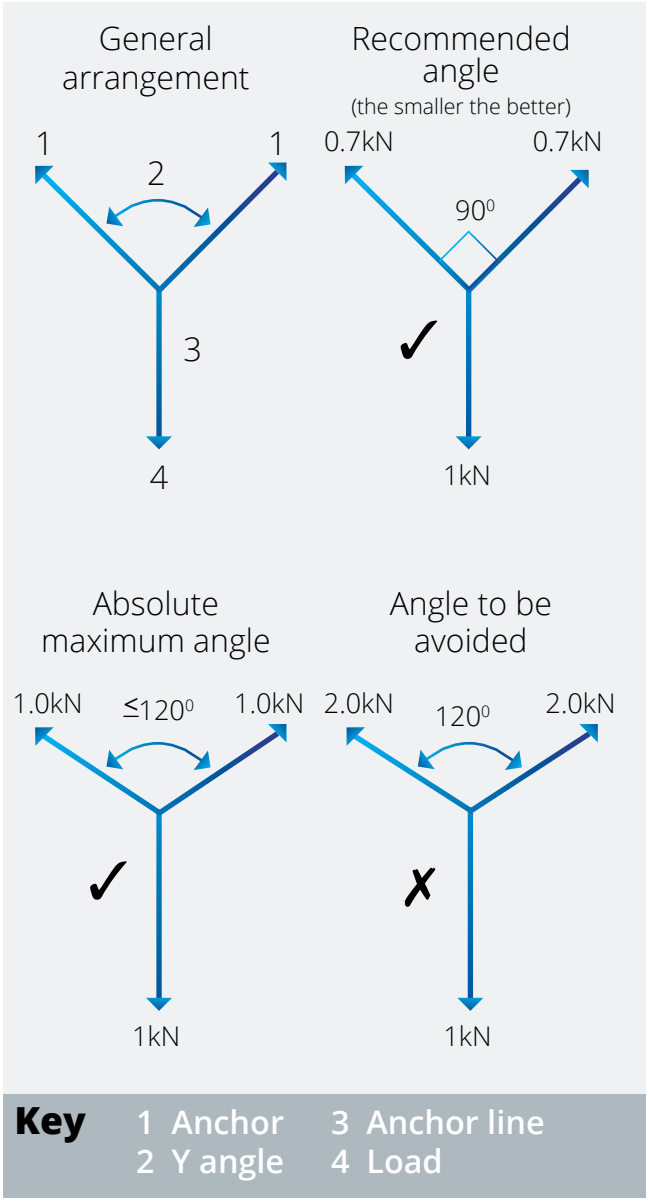


PRODUCT DESCRIPTION:

Abseil anchors are designed to be fixed to a structural substrate such as structural steel or concrete to provide suitable rope access connection points. It is essential when designing rope access to ensure at least 2 connection points are available to connect to at any one time. There are 2 types of abseil anchors available – abseil brackets and abseil eyebolts. Brackets are supplied in galvanised steel with stainless steel components. Neoprene washers ensure no galvanic reaction can take place. Abseil eyebolts are supplied in stainless steel . Brackets and eyebolts are secured to concrete with resin anchors and to steelwork with stainless steel bolts, washers and vibration proof nuts. When fixing to metal deck or timber deck it may be necessary to provide a backing plate to ensure compliance.



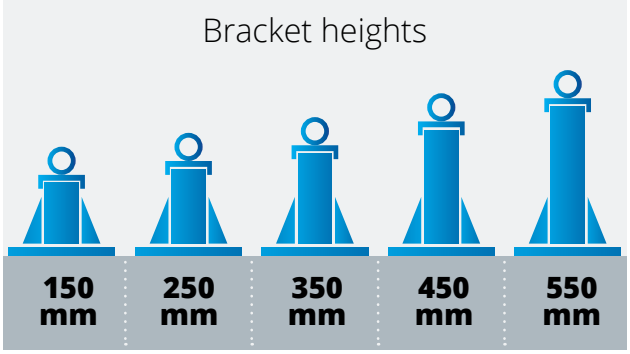
The brackets are designed for 1 user at any one time and 2 users in the event of emergency access requirements. Brackets need to be positioned so any rope connections do not exceed a 120 degree angle when in use – an angle of 90 degrees is recommended. This will be determined by the design layout and position of the anchors. Involving our specialist design teams as early as possible will ensure the most cost effective system is used without compromising any safety or access requirements. Our designers will consider the welfare and safety of both rope access and non-rope access personal during the construction and future use.

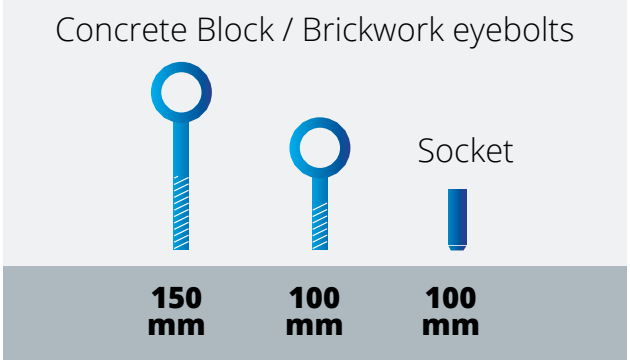


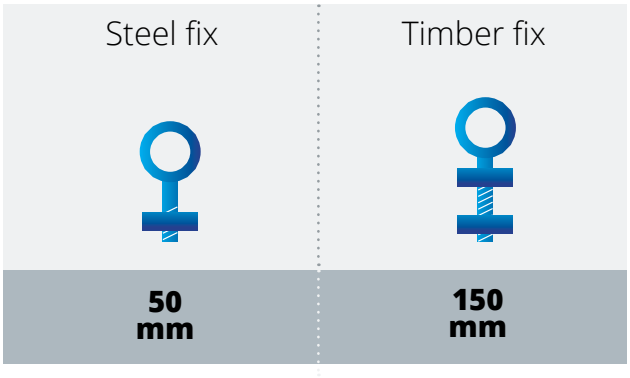
Key 1 Anchor 3 Anchor line
2 Y angle 4 Load

Brackets can be supplied in varying heights from 150mm up to 750mm to accommodate different roof constructions. The brackets are manufactured with a strengthening gusset

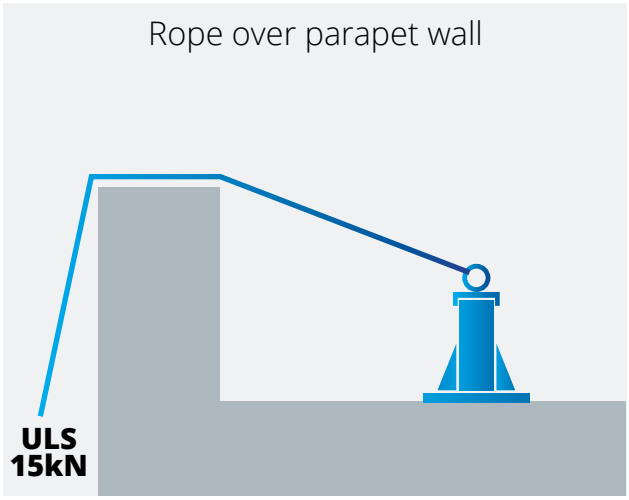
to ensure compliance with 15kN design load requirements. Eyebolts are supplied in 150mm or 100mm lengths for concrete and block/brick fixing. Shorter eyebolts of 50mm are used in structural steel. For timber of sufficient strength the 150mm eyebolt can be used with vibration resistant locking nuts and large washers either side. A minimum thickness of 125 mm treated timber is required.







Both abseil anchors and eyebolts can be installed on the horizontal or vertical substrates of a building. Careful consideration must be taken when designing the abseil positions to ensure abseil ropes will not foul with any roof plant or roof penetrations. If ropes are required to lie over any parapet walls or edge protection such as balustrading it will be necessary to ensure that the parapet has been re-enforced. The use of a abseil rope spreader plate can reduce the point loading considerably.



The main contractor is responsible for calculations regarding building loading capabilities and is responsible for the reinforcement of the parapet. As a rule a minimum force of 1.5 kN should be considered.

MATERIAL SPECIFICATION:
Brackets - galvanised steel

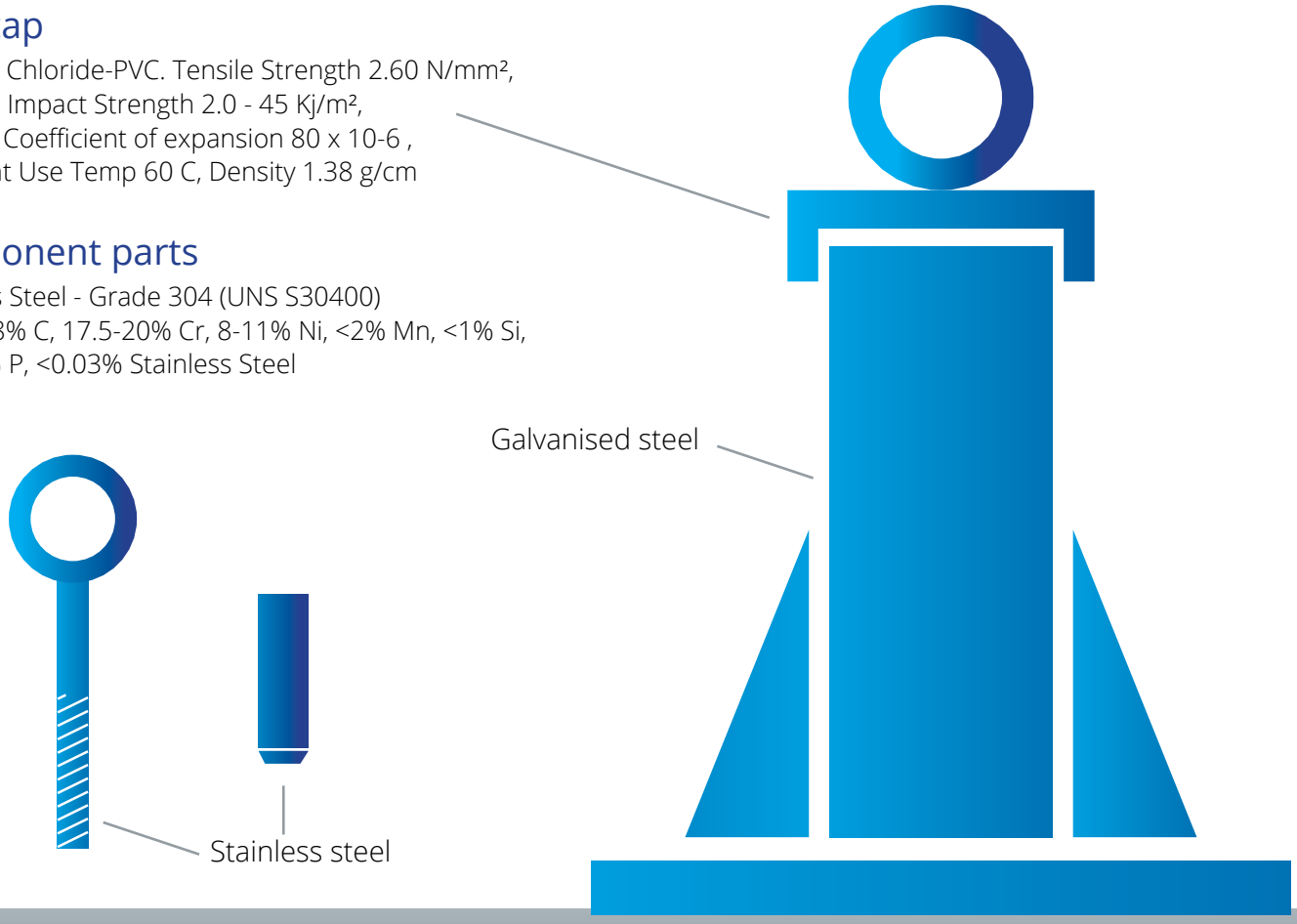
Yield	275 N/mm² C 0.15 – 0.26; Si < 0.35; Mn < 1.5; P < 0.035; S < 0.040; Mo 0.4 – 0.6.
Young's Modulus of Elasticity	200 x 103 MPa at 20 °C
Density	7.87 g/cm3 at 20 °C
Coefficient of Thermal Expansion	Low-Carbon/HSLAS: 12.4 µm/m/°C in 20 °C to 100 °C range I-F Steel: 12.9 µm/m/°C in 20 °C to 100 °C range
Thermal Conductivity	Low-Carbon/HSLAS: 89 W/m°C at 20°C I-F Steel: 93 W/m°C at 20°C
Specific Heat	481 J/kg/°C in 50 °C to 100 °C range
Electrical Resistivity	0.142 µΩ•m at 20 °C

Rain cap

Polyvinyl Chloride-PVC. Tensile Strength 2.60 N/mm²,
Notched Impact Strength 2.0 - 45 Kj/m²,
Thermal Coefficient of expansion 80 x 10-6 ,
Max Cont Use Temp 60 C, Density 1.38 g/cm

Component parts

Stainless Steel - Grade 304 (UNS S30400)
Fe, <0.08% C, 17.5-20% Cr, 8-11% Ni, <2% Mn, <1% Si,
<0.045% P, <0.03% Stainless Steel



INSPECTION/MAINTENANCE/ TRAINING

INSPECTION ROUTINE:

All systems to be inspected at least every 12 months from date of installation.

In harsh environments all systems to be inspected at least every 3 months.

Inspections must be carried out by approved Aviator engineers.

Inspections must be approved to SIMS (Safety Inspection and Maintenance Service) standards.

All inspections to be carried out to EN795:2012 and BS 7883:2005 and WAHSA (inspection of eyebolts) requirements for safety line and anchor points.

All inspections to be carried out to EN364 requirements for personal protective equipment.

Contact Sayfa Systems to arrange inspections.

MAINTENANCE SCHEDULE:

All maintenance to be carried out by approved Aviator engineers. Maintenance to be in accordance with Sayfa Systems UK (manufacturer) guidelines and recommendations.

In harsh environments all systems to be inspected at least every 3 months.

Maintenance to be in accordance with SIMS standards. (details available on request)

Maintenance to be carried out at time of yearly inspection.

Contact Sayfa Systems to arrange system maintenance.

TRAINING REQUIREMENTS:

All personnel who use the Aviator system should have attended a Sayfa Systems Ltd, Aviator users course.

Courses are available from Sayfa Systems UK Ltd.

Courses cover the use of all Aviator and Payload products, the legal and practical side of the Working at Height legislation - 2005 and how to use and carry out safety checks on harnesses and all necessary PPE equipment.

SAYFA SYSTEMS UK

CERTIFICATE

OF

OPERATIVE INSTRUCTIONAL TECHNIQUES AND

WORKING AT HEIGHT SAFETY

In recognition of successful completion of training for the installation and assembly, use, handling and safety checks of:-

- Aviator Safety Line Systems ■
- Aviator Mobile Anchors ☐
- Payload Access Ladder Systems ☐
- Payload Handrail Systems ☐
- Aviator PPE ■

To:

.....

Location of Training:

.....0.....

Certificate Number:

.....

Name of trainee: ..... Signed by trainee: .....

Inductor's name: Adrian Stutterheim..... Signed: Adrian Stutterheim.....

Date of Training: 00 January 1900 .....

Aviator Payload

OPERATING AND DESIGN STANDARDS:

BS EN ISO Standards

Eurocodes are designated by EN

British standards are designated by BS

- Steel – EN10 113 and EN 10 025
- BS 7985: 2013 Code of Practice for Rope Access Methods for industrial purposes
- The lifting operations and lifting equipment regulations 1998
- LOLER REG. 5(1) (a and b) for design
- LOLER REG. 7(a, d and e) for marking
- LOLER REG. 9 (1, 2 , 3 a and b) for examination
- ISO 9001:2008, ISO14001:2004, BS OHSAS 18001:2007
- Management of health and safety at work regulations 1999 (MHSWR) ref.2
- Work at height regulations 2005 (Ref 7)
- Work at height (amended) regulations 2007 (Ref. 8) WAHR
- BS ISO 22846-2:2012 Personal Equipment for the protection against falls -Code of Practice
- BS ISO 22846 - 1 :2003 Personal Equipment for the protection against falls - Fundamental Principles for a system of work

The company operates to the following standards

- Provision and use of work equipment regulations 1999 PUWER 98 (Ref.5)
- The work at height safety association WAHSA- guidance on inspecting eyebolts for personal fall protection purposes

Typical connection loads (bracket height up to 150mm)

Ultimate factored load on bracket base

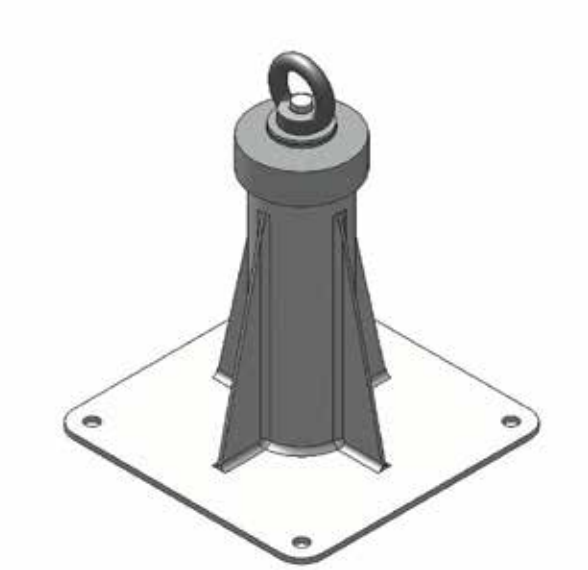
Bracket moment

Note: For guidelines only to be checked by Chief Engineer.

COMPONENT PART DETAILS:

Abseil brackets AB300

BIM No: SpecEquip_RfSftySymAbslBkt_SayfaSystems_AB300_M3_G2



Resin fix Abseil eyebolts EBRF370

BIM No: SpecEquip_RfSftySymAbsEye BltCon_SayfaSystems_EBRF370_M3_G2

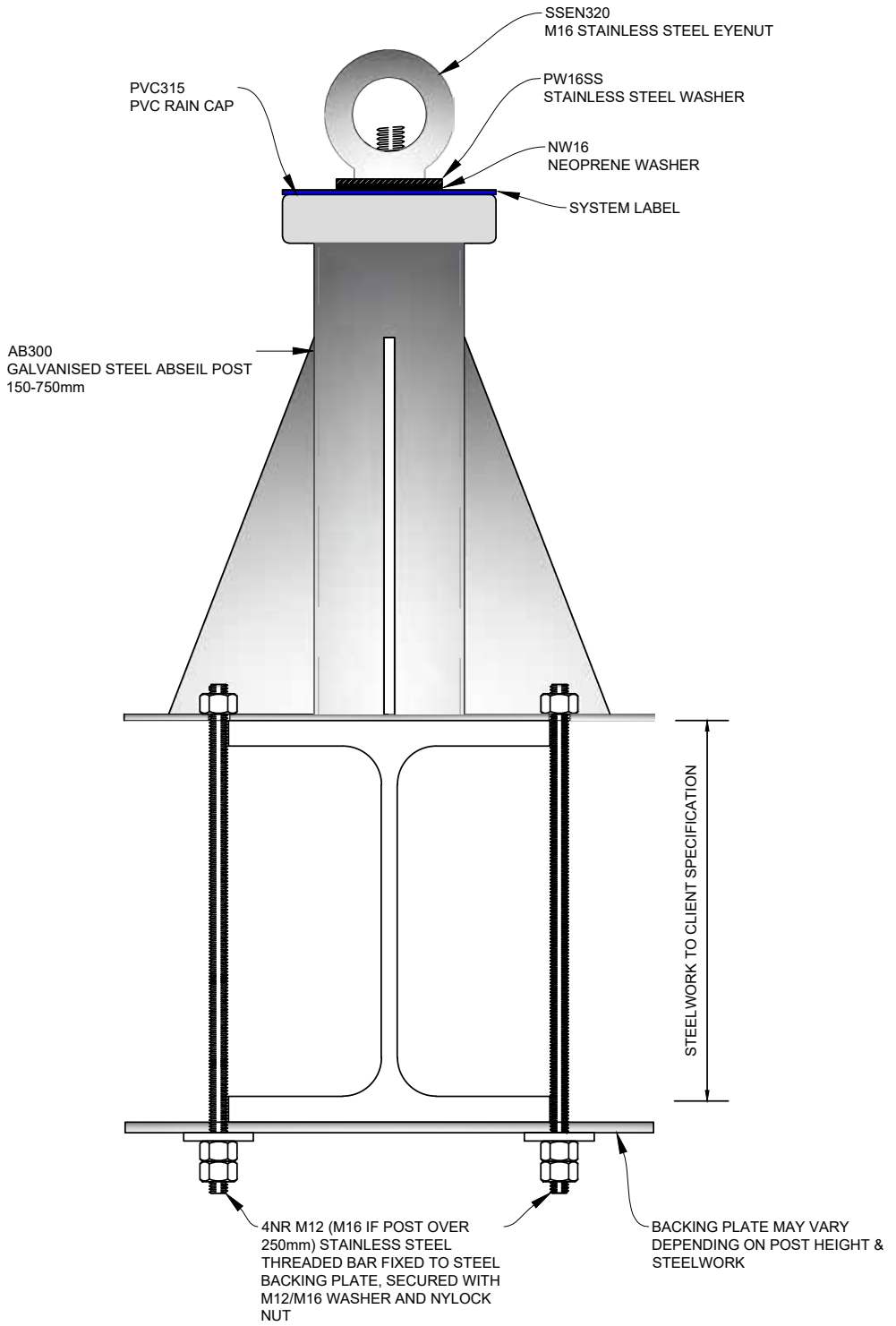
Steelwork abseil eyebolts EBSF365

BIM No: SpecEquip_RfSftySymAbsEye BltStl_SayfaSystems_EBRF365_M3_G2

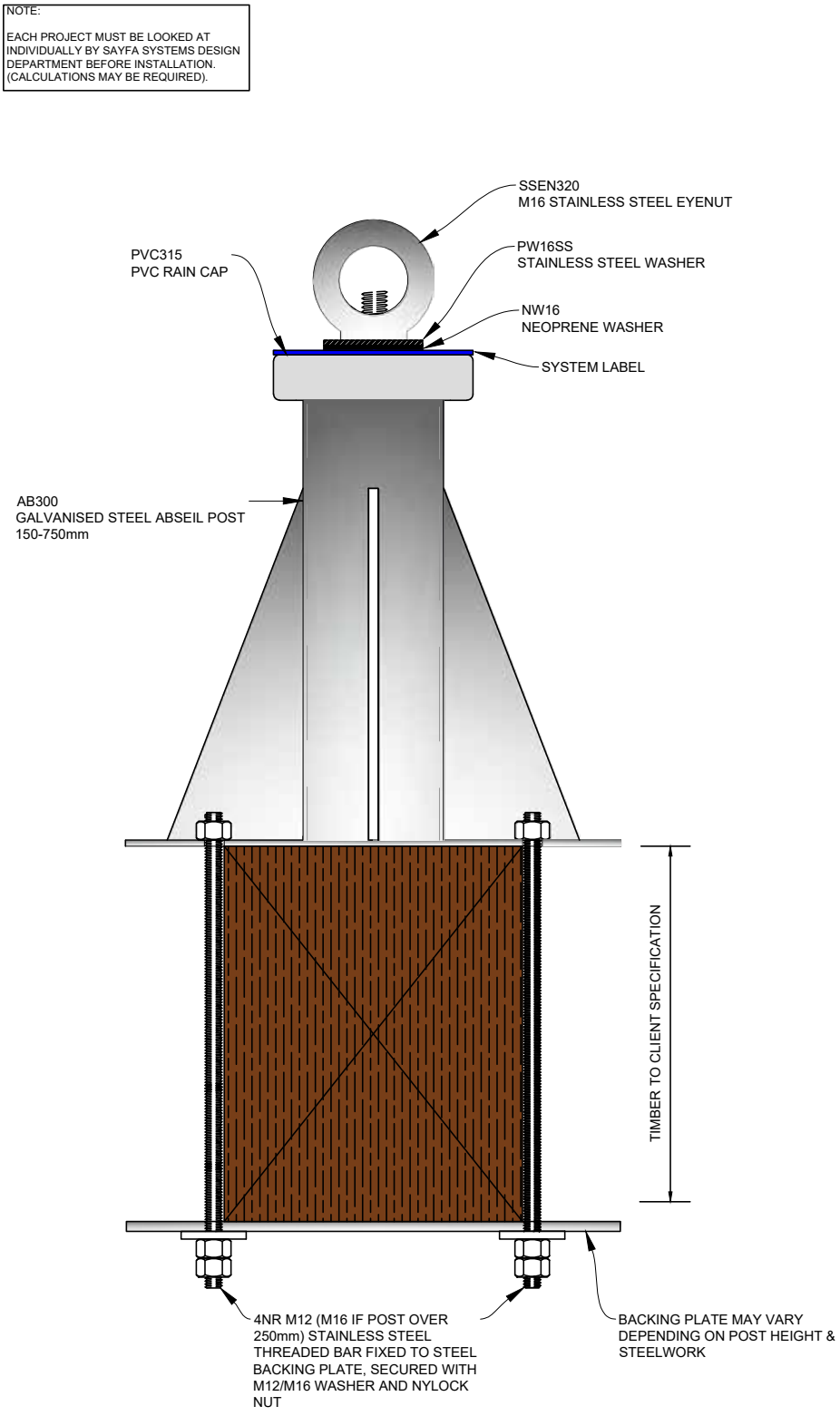
Timber abseil eyebolt EBRF390

BIM No: SpecEquip_RfSftySymAbsEye BltTimb_SayfaSystems_EBRF390_M3_G2

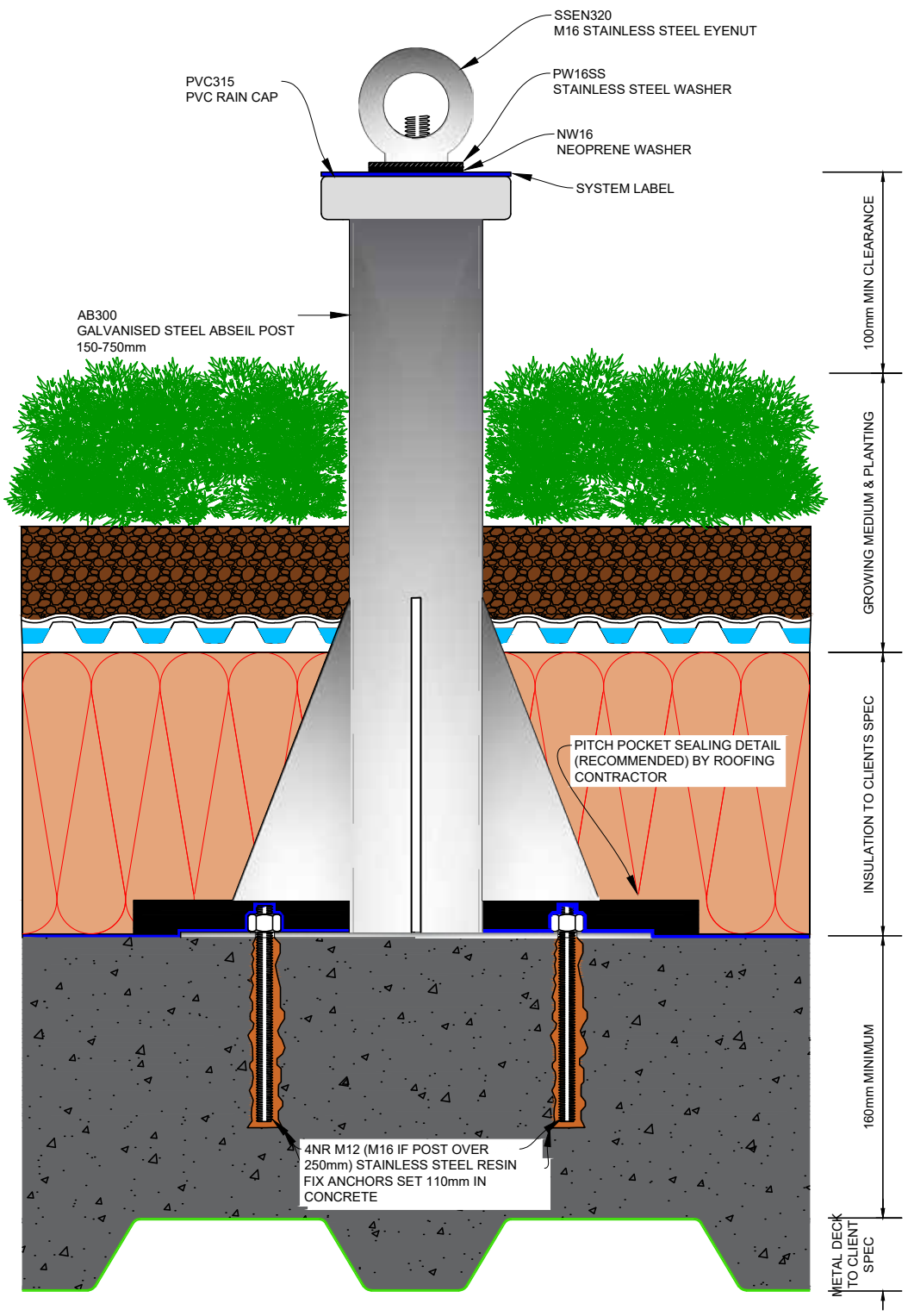
Aviator™ Abseil Anchor Fixed To Steelwork (Clamp Detail)



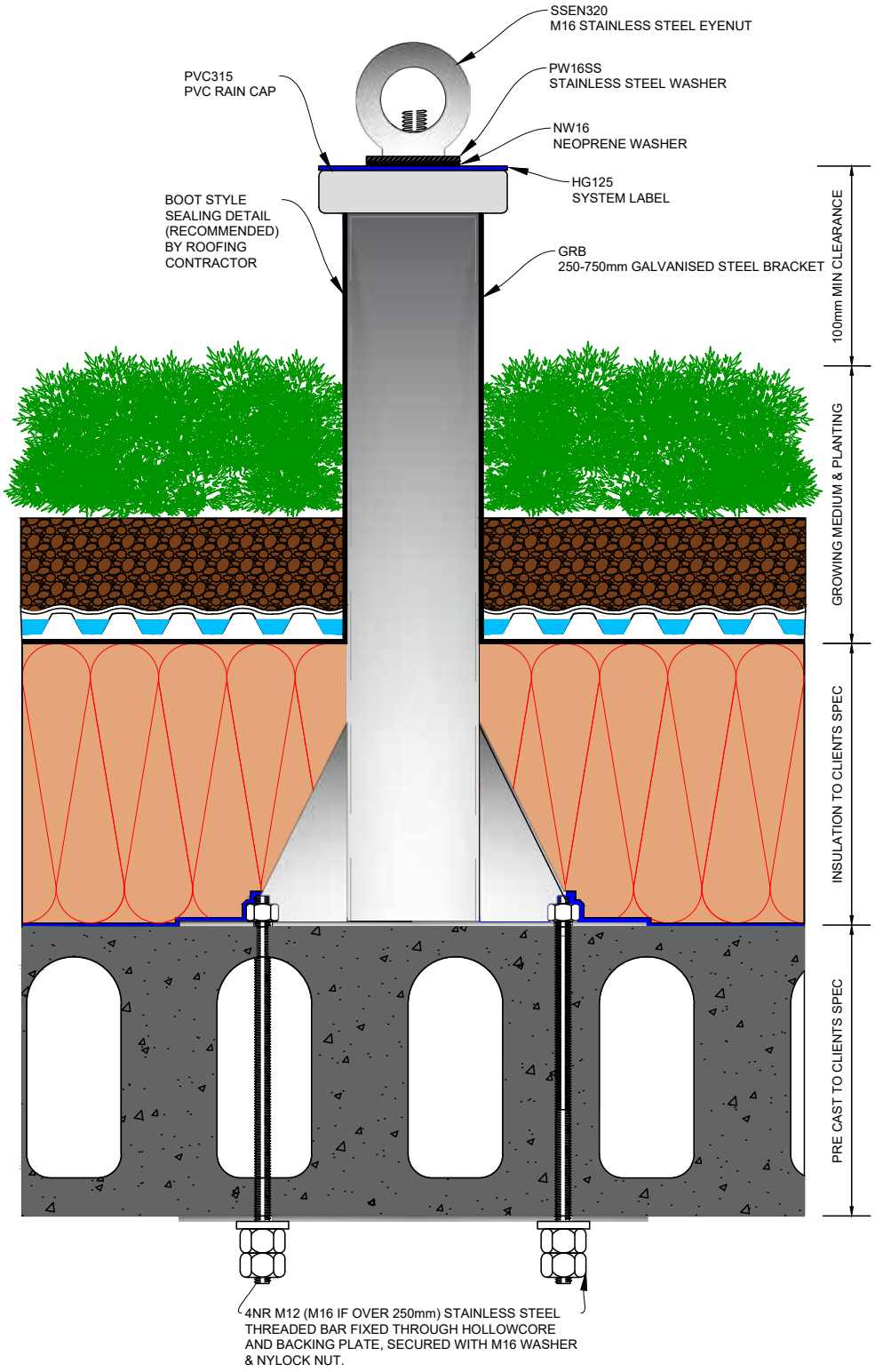
Aviator™ Abseil Anchor Fixed To Timber (Clamp Detail)



Aviator™ Abseil Anchor System Fixed In To Cast Concrete Slab On Metal Deck



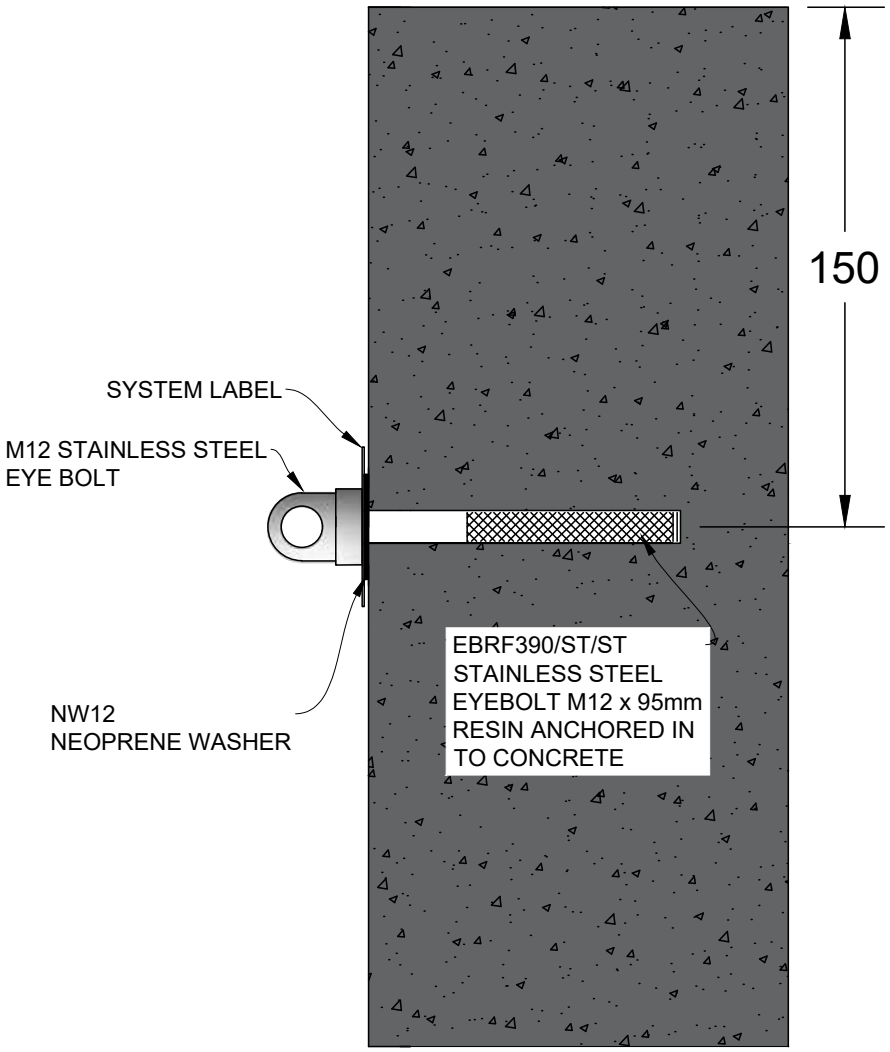
Aviator™ Abseil Anchor Fixed To Hollowcore Concrete Slab Slab



Aviator™ Permanent Eyebolt System Fixed To Concrete Slab

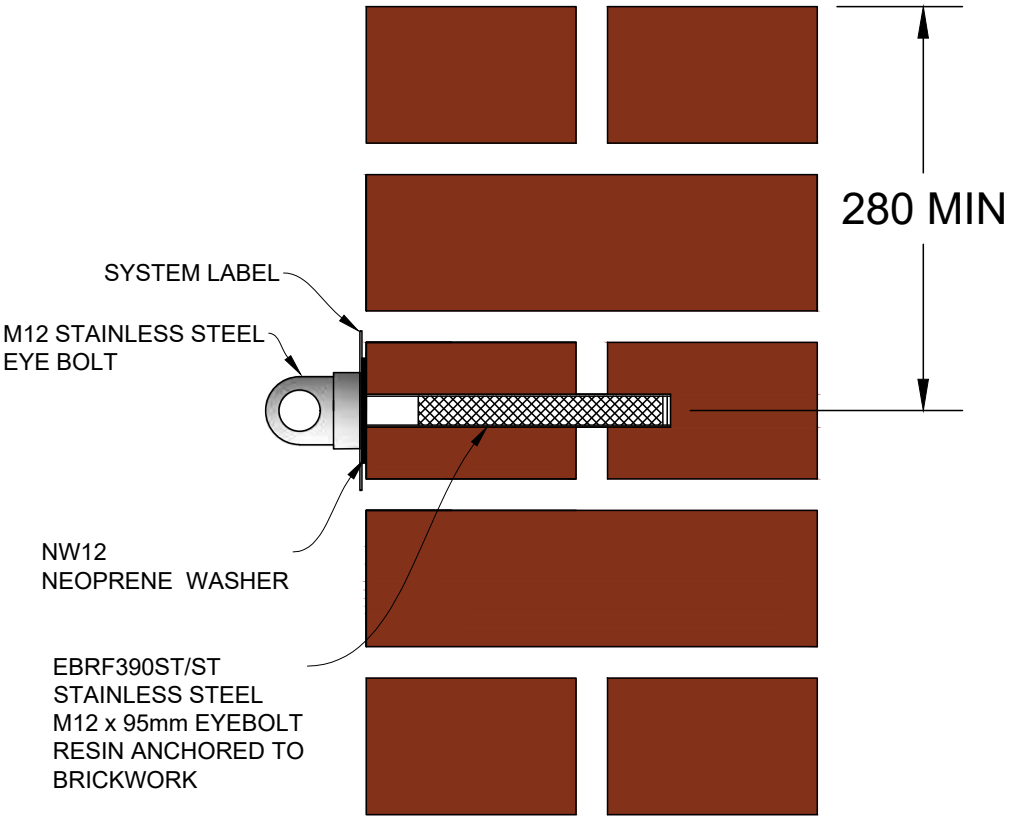
NOTES:

- CONCRETE TO BE MINIMUM 175mm THICK
- 300mm MINIMUM SPACING BETWEEN ANCHORS
- NO TRIAL TEST NEEDED IN CONCRETE UNLESS SUSPECT
- 6kN PROOF TEST REQUIRED
- EACH PROJECT TO BE ASSESSED BY SAYFA SYSTEMS DESIGN & OPERATIONS DEPARTMENTS FOR FEASIBILITY



Aviator™ Permanent Eyebolt System Fixed To Solid Brickwork/ Stonework

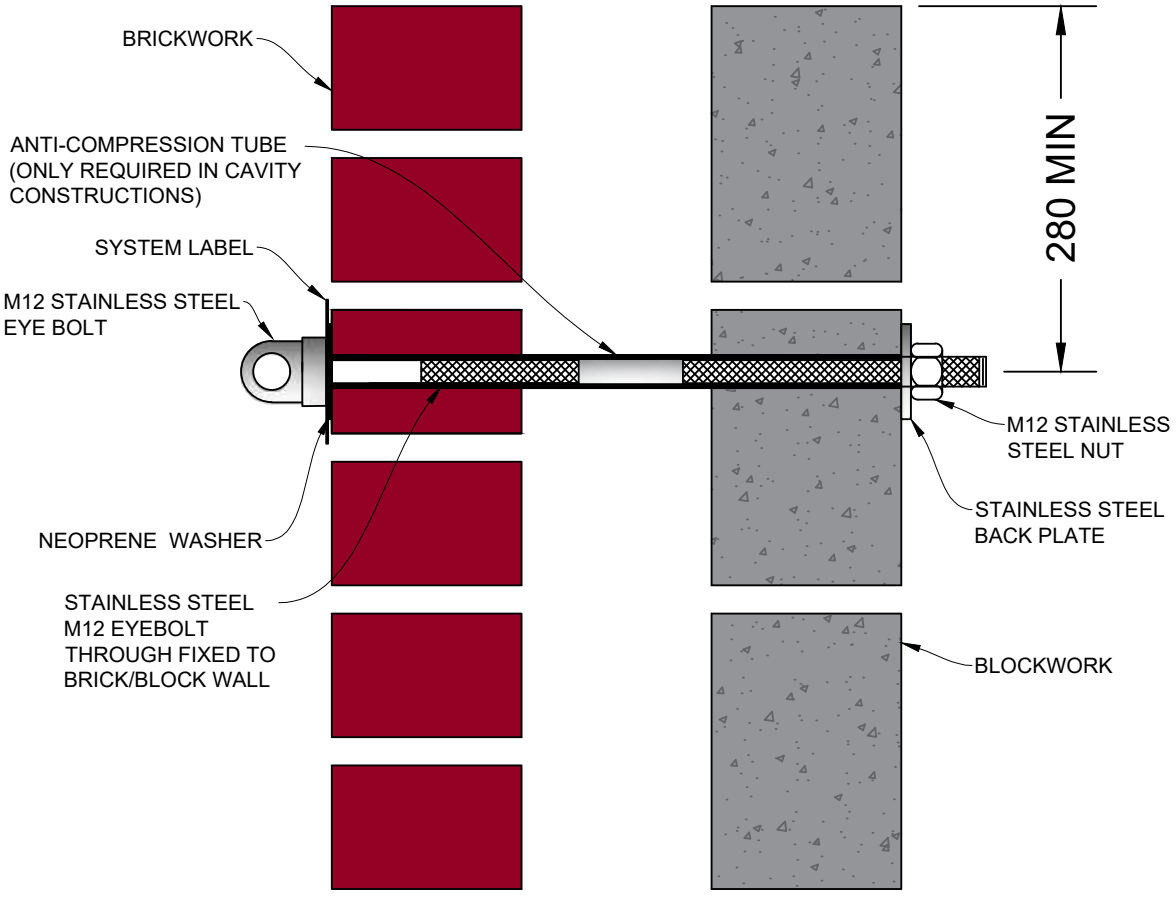
- SOLID BRICKWORK/STONEWORK TO BE MINIMUM 215mm THICK
- 350mm MINIMUM SPACING BETWEEN ANCHORS (UNRENDERED)
- 500mm MINIMUM SPACING BETWEEN ANCHORS (RENDERED)
- 12kN TRIAL TEST NEEDED
- 6kN PROOF TEST REQUIRED
- FIXING TO NON LOAD BEARING STRUCTURES SUBJECT TO STRUCTURAL CALCULATIONS



Aviator™ Permanent Eyebolt System Fixed To Brickwork With Cavity

NOTES:

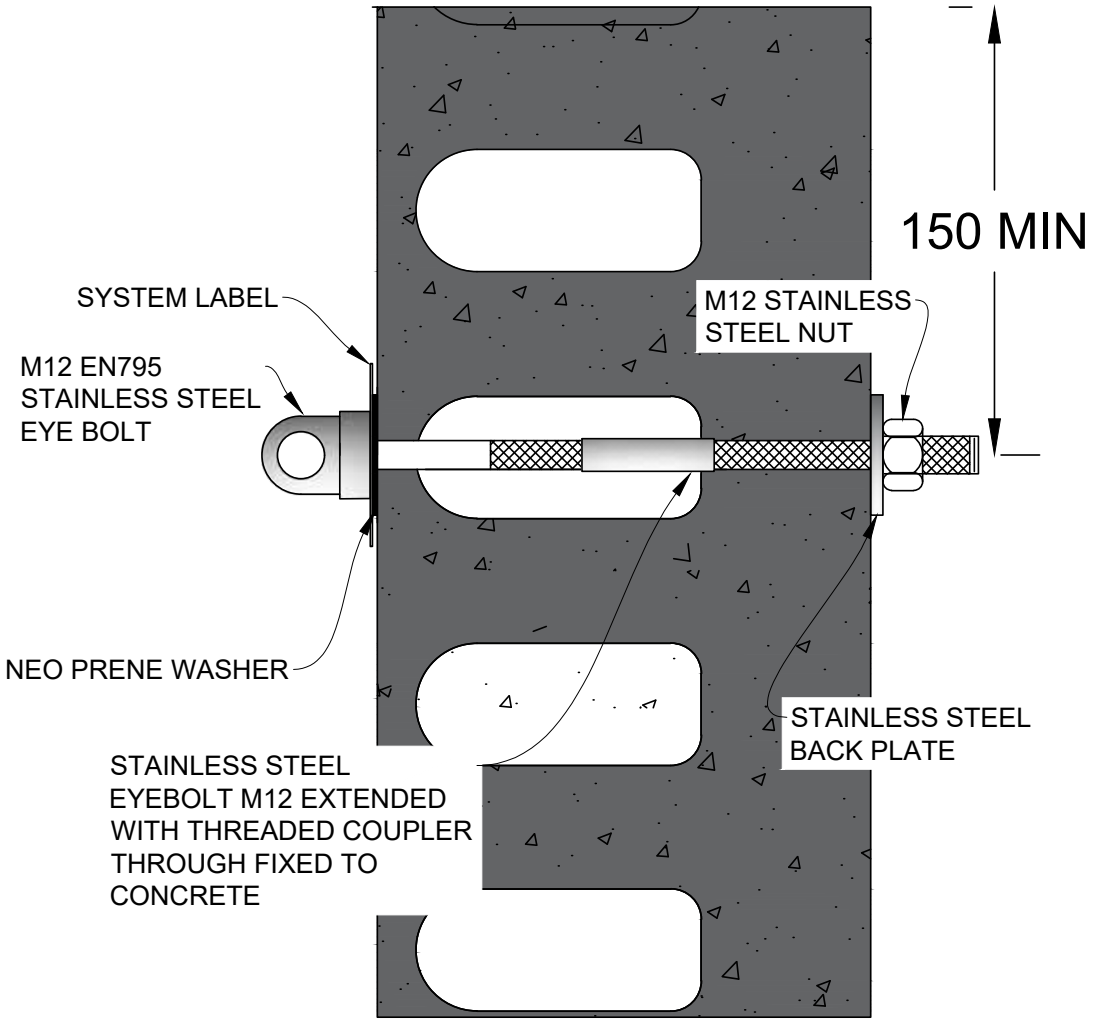
- INSTALLATION ALLOWS FOR ANY THICKNESS OF WALL
- 350mm MINIMUM SPACING BETWEEN ANCHORS (UNRENDERED)
- 500mm MINIMUM SPACING BETWEEN ANCHORS (RENDERED)
- MUST NOT BE LOAD TESTED AT ANY STAGE



Aviator™ Permanent Eyebolt System Fixed To Hollowcore Concrete Slab

NOTES:

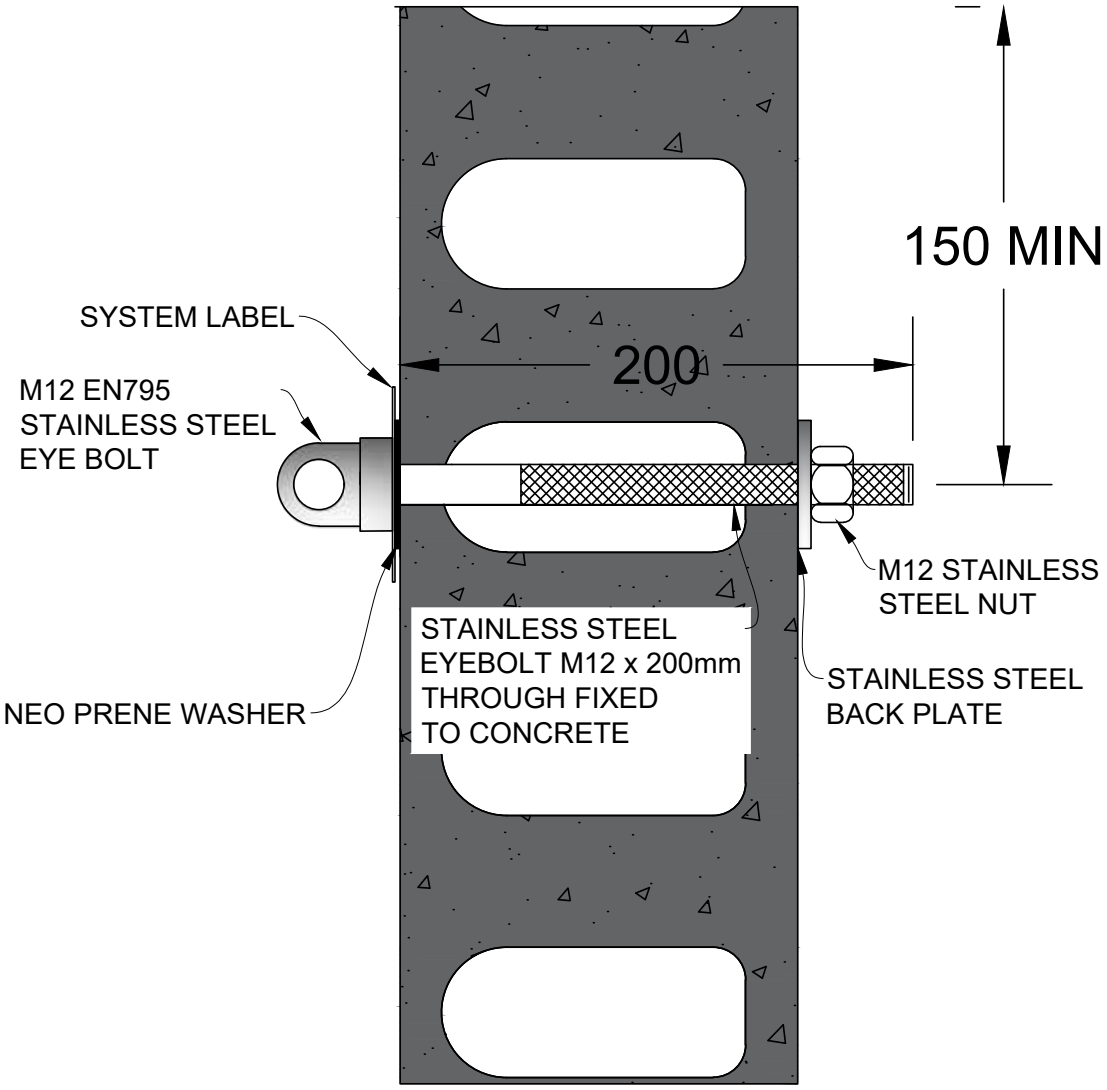
- CONCRETE TO BE MINIMUM 176mm THICK
- 300mm MINIMUM SPACING BETWEEN ANCHORS
- NO TRIAL TEST NEEDED IN CONCRETE
- 6kN PROOF TEST REQUIRED OR TIGHTEN TO REQUIRED TORQUE



Aviator™ Permanent Eyebolt System Fixed To Thin Hollowcore Concrete Slab

NOTES:

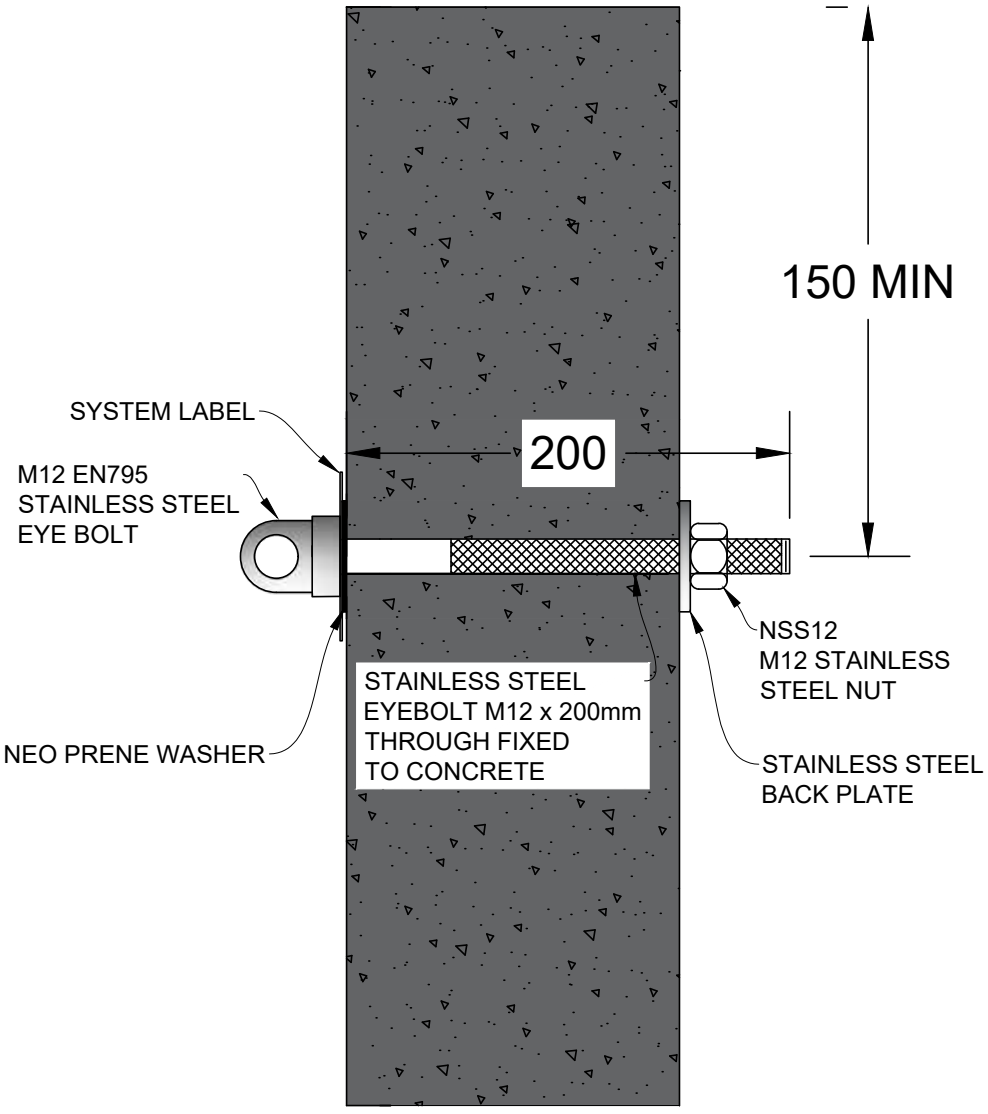
- CONCRETE TO BE 150-175mm THICK
- 300mm MINIMUM SPACING BETWEEN ANCHORS
- NO TRIAL TEST NEEDED IN CONCRETE
- 6kN PROOF TEST REQUIRED



Aviator™ Permanent Eyebolt System Fixed To Thin Concrete Slab

NOTES:

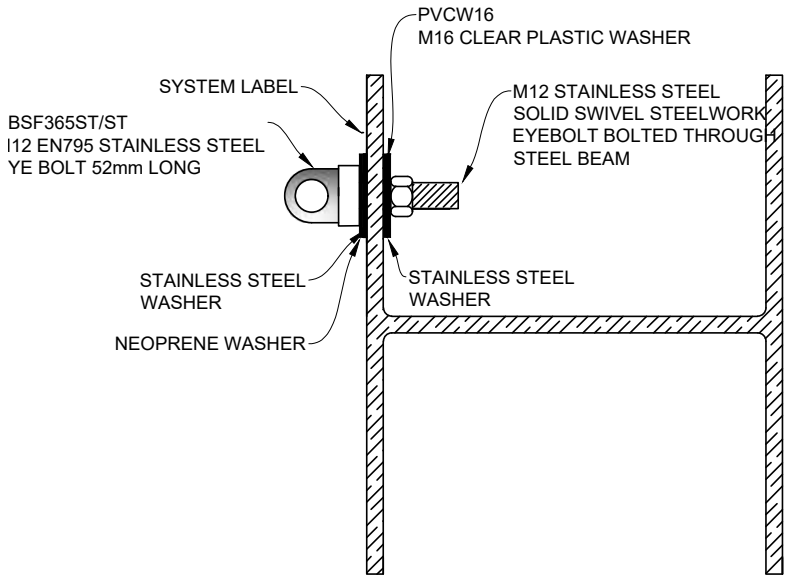
- CONCRETE TO BE 150-175mm THICK
- 300mm MINIMUM SPACING BETWEEN ANCHORS
- NO TRIAL TEST NEEDED IN CONCRETE UNLESS SUSPECT
- 6kN PROOF TEST REQUIRED
- EACH PROJECT TO BE ASSESSED BY SAYFA SYSTEMS DESIGN & OPERATIONS DEPARTMENTS FOR SUITABILITY



Aviator™ Permanent Eyebolt System Fixed To Steelwork

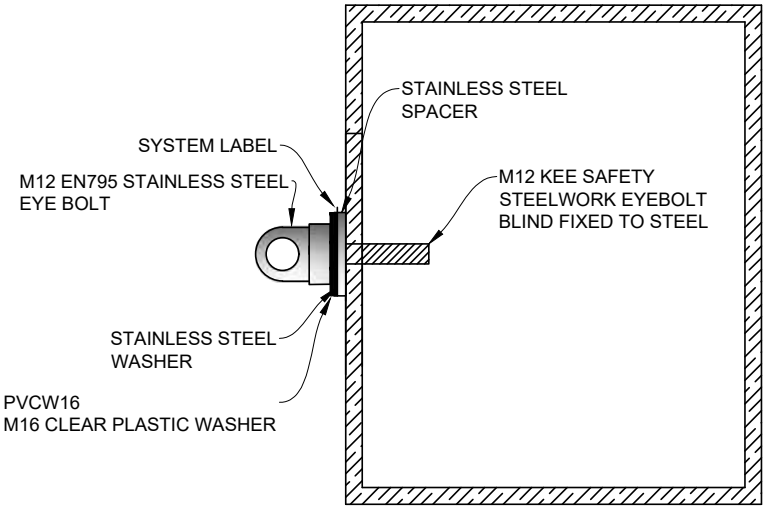
NOTES:

- SOLID SWIVEL EYEBOLT REQUIRES MINIMUM 10mm THICKNESS
- MINIMUM 27mm EDGE DISTANCE
- MINIMUM 50mm SPACING BETWEEN ANCHORS
- NO TRIAL TEST REQUIRED
- 6kN PROOF LOAD TEST REQUIRED
- 14mm COUNTERSUNK HOLE



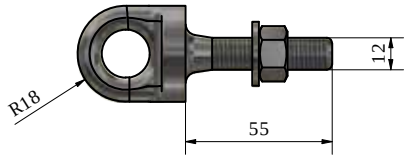
NOTES:

- SOLID SWIVEL EYEBOLT REQUIRES MINIMUM 12mm THICKNESS
- MINIMUM 25mm EDGE DISTANCE
- MINIMUM 50mm SPACING BETWEEN ANCHORS
- NO TRIAL TEST REQUIRED
- 6kN PROOF LOAD TEST REQUIRED
- 10.2mm COUNTERSUNK & TAP M12

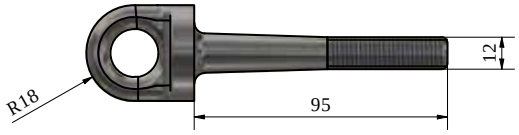


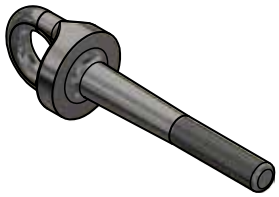
Aviator™ Eyebolt Components

EBSF365ST/ST - M12 EN795 STAINLESS STEEL EYEBOLT 52mm LONG

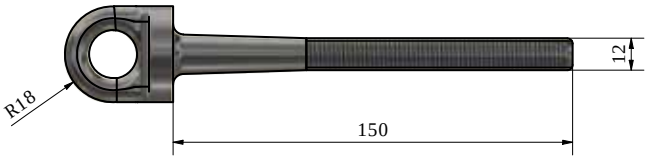


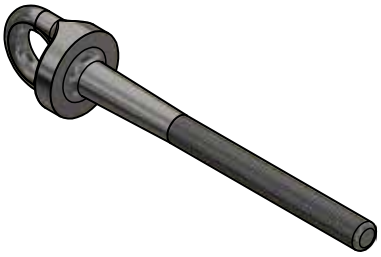
EBRF370ST/ST-100 - ABSEIL EYEBOLT 100mm LONG



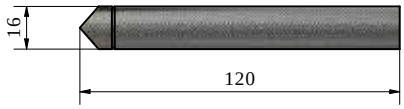


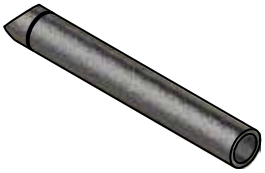
EBRF370ST/ST-150 - ABSEIL EYEBOLT 150mm LONG





RAS120 - EYEBOLT SOCKET 120mm





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