

Global Suppliers of Quality Handrails, Staircases, Ladders, Platforms & Covers in Aluminium, Stainless Steel and Mild Steel Galvanised



Head Office: Dawley House, Dawley Brook Road, Kingswinford, UK. DY6 7BB

Tel +44 1384 389750 Email sales@antaccess.uk

Company Registration No. 9757513



INTRODUCTION

Ant Access International Ltd (AAIL) is a UK based company working with the construction industry throughout the world.

From our UK Head Office, we operate throughout the UK and internationally through our agents, supplying UK manufactured equipment to projects as diverse as:

Sewage Treatment Plants
Water Treatment Plants
Public Buildings
Power Plants
Petro-chemical Plants
Aviation Sector
Rail Sector

AAIL provides the full service from initial design, detailing, manufacture, shipment & installation supervision.

Our extensive experience in all sectors ensure we are well placed to meet with clients and consultants to ensure that what we provide meets their highest expectations.

AAIL are accredited with BSI ISO9001:2015 & EN1090-1:2009+A1:2011

We are one of the only companies that can supply the full range of products in:

- Anodised Aluminium Grade 6082-T6
- Stainless Steel Grade 316
- Mild Steel Hot Dip Galvanised
- GRP

ANT ACCESS INTERNATIONAL LTD



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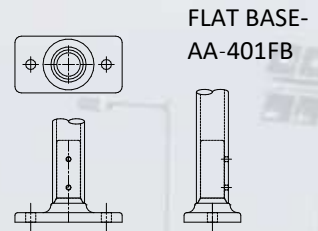


TUBULAR MARINE GRADE ALUMINIUM HANDRAIL AA401 HANDRAIL

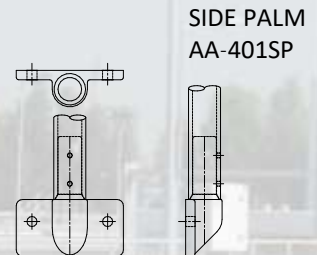
AA401 is a versatile heavy duty aluminium handrail system, constructed from marine grade aluminium alloy materials designed to give maximum strength. AA401 is suited to most situations and is tailor made in component form to suit each individual installations, or in stock lengths for on site fabrication. The aluminium construction offers excellent corrosive resistance in its natural state, this may be further enhanced with surface treatment such as anodising.

The handrails are generally supplied in pre- formed/fabricated bends, being individually marked for easy identification & assembly on site, with the assistance of layout drawings provided. Straight sections of handrail are supplied in standard 6 Mtr lengths for site cutting / assembly.

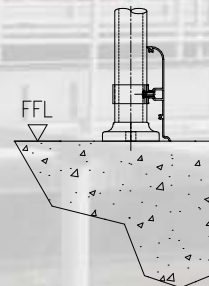
Where handrails are provided for attaching to customers equipment or to building structures, adequate consideration must be given to the design of such structures to resist any loads imposed by the handrails and fixings.



FLAT BASE-
AA-401FB



SIDE PALM
AA-401SP



ALU TOEPLATE AA-401TPt

The AA401 aluminium handrail system is supplied from heavy duty aluminium posts of 50.8mm dia shank, with 38.1mm o/d top and intermediate handrails. The post is drilled to receive the intermediate rail, whilst the top rail is secured via a die cast tee section, all secured via stainless steel grub screws. The post is supported on high duty heat treated die cast bases, generally drilled to receive M12 fixings. 150mm high toeplate is supplied as required, secured to the handrail posts. 3 hole bases are available if specified / required.

Materials:

Top Tee Section – BS EN 1676
 Bases – BS EN 1676
 Handrail Tube – BS EN 573 & BS EN 755
 (grade 6082)



MARINE GRADE ALUMINIUM ACCESS LADDERS TYPE AA420

Access ladders are designed for access to platforms and structures where use of a stair is not suitable.

Ladders are 380mm min between stringers, complete with rungs at 300 max ctrs.

For the AA420 ladder type, the stringers are opened out to 700mm for a walk-through and is complete with a three rung top step section. For ease of transport / installation, ladders can be spliced. Ladders are secured with stays at generally 2500 ctrs, although this may increase if larger stringer sections are used.

Safety cages or fall arrest systems are an essential requirement for ladders where a user could fall 3m or more or come into contact with dangerous equipment.

Safety cages should start 2400mm from FFL & have hoops in line with the handrail ctrs to the head and 900mm max spacing there-after.

Inclined ladders should be set at 75° or steeper.

Landings where required should not be less than 840mm square complete with handrails and toe plates to protect open sides.

Material: Aluminium Marine Grade 6082 T6 Stringers condition to BS1474 u.n.o.

Ladders stringers & walk-through:
65 x 13 flat bar minimum, c/w 20mm dia solid serrated rungs.

Box section stringers can be offered as an alternative – 89 x 29
c/w 24mm dia tubular ribbed rungs.

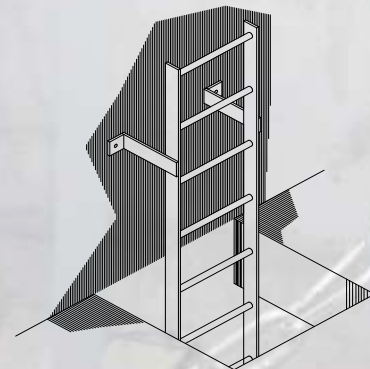
Safety Cage, (hoops & straps):
50x8 flat bar.

Ladder stays:
Generally flat bar of the same section as the ladder stringers.

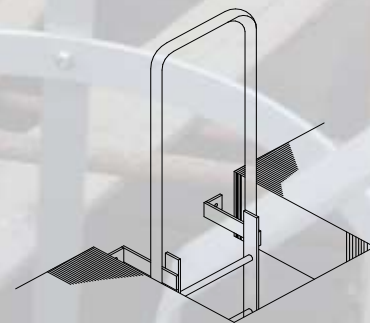
Note:
A self closing gate, or safety chains should be provided to ladders with walk-through's, to guard against falls.

All fixings are stainless steel gr316.

Finish:- Anodised AA20.



AA421 - LADDER
EXTENDED ABOVE
FFL, FOR HANDHOLD



AA422 - LADDER
WITH RETRACTABLE
HANDHOLD

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MARINE GRADE ALUMINIUM STAIRS AA430

AA430 aluminium stairs are provided in accordance with BS EN ISO 14122 & BS 5395, which should be consulted during the design of any single / multi flight stairs.

General Considerations:

Individual stair flights should not exceed 3000mm rise between floor or landing levels, nor contain more than 16 risers.

The preferred stair pitch is from 30 to 38°, although for a private stairs unto approx. 42° is acceptable.

Handrails to the stair flight should be between 900mm & 1000mm high from the pitch line, with handrails to landings 1100mm min – both cases complete with intermediate rails.

Treads & risers should be pitched such to afford comfortable gait – please refer to the table in BS 5395, however approx. 250mm going & 190mm rise is typical.

For stairs with open risers, the nosing of any tread or landing should overlap the back of the tread below by not less that 16mm.

Assembly stairs exceeding 36 risers in consecutive flights, should have at least on change of direction between flights, (min 30°).

Headroom, (vertical distance from FFL), over stairs and landings should not be less than 2000mm with a clearance, (distance perpendicular to the pitch line) of at least 1500mm. For stairs of 3 steps of less this should be increased.

Materials:

Stringers – Generally flat bar, or channel section.

Handrails – As per AA1401 series.

Flooring & Treads – As per AA1410 series.

FINISH

Anodised AA20



ANODISED TREAD WITH GOLD NOSING

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MARINE GRADE ALUMINIUM FLOORING AA410 / AA411

AA410 flooring is 30mm deep, both in solid top AA410 and open type (25% open area) AA411 and is manufactured from marine grade 6082 T6 material.

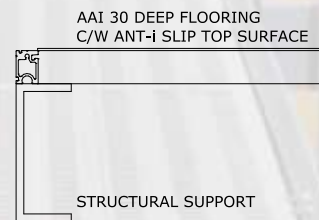
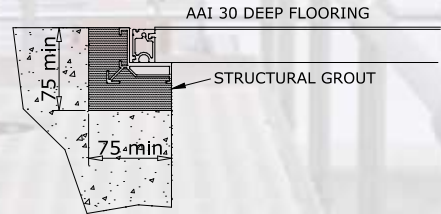
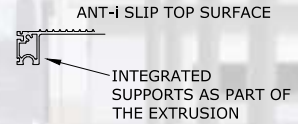
Both solid top and open type aluminium flooring systems benefit from a high strength to weight ratio and are virtually maintenance free. Integrated stiffeners give the floor system large span capabilities thus reducing the number of supports necessary. Both systems offer a ribbed top surface that provides a firm ANT-i slip grip which is further enhanced by serrating.

AA410 flooring is supplied in pre-fabricated panels constructed from standard interlocking sections locked together with specially designed end bars, (binding / nosing bars). Any cut-outs that are required are incorporated at the manufacturing stage accommodating pipework, cables and services etc.

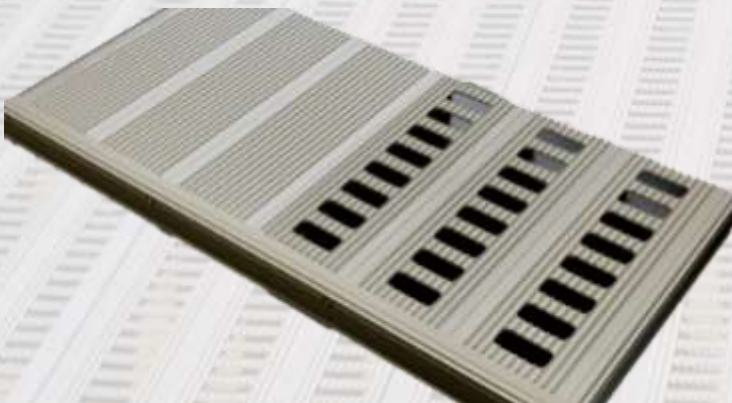
Floor panels are individually numbered for easy identification and installation on site, with the assistance of layout drawings provided. Specially designed curbing is also available, as illustrated, where flooring to trench / chamber rebates is required.

Flooring from aluminium alloy grade 6082 T6 to BS EN 573 & BS EN 755

Finish: Anodised AA20



SOLID TYPE AA410



OPEN TYPE AA411

SPINDLE ACCESS COVER



LIFTING HANDLES

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FLOOR LOADING CAPABILITIES AS TESTED & RECORDED BY LLOYDS BRITISH

- Table 1 shows the actual deflections recorded under UDL with the floor panel supported on 4 sides
- Table 2 shows the actual deflections recorded under UDL with the floor panel supported on 2 sides

<u>TABLE 1</u>			
AA410 Solid serrated aluminium flooring panel supported on 2 sides (UDL)			
CLEAR SPAN	1000mm	1500mm	1750mm
5kN M2	509Kg	763Kg	890Kg
	3mm	9.91mm	12.82mm
7.5kN M2	764Kg	1146Kg	1337Kg
	5.02mm	13.05mm	14.90mm
<u>TABLE 2</u>			
AA410 Solid serrated aluminium flooring panel supported on 4 sides (UDL)			
CLEAR SPAN	1500mm	1500mm	1750mm
5kN M2	509Kg	763Kg	890Kg
	0.83mm	5.52mm	8.05mm
7.5kN M2	764Kg	1146Kg	1337Kg
	1.00mm	7.18mm	10.14mm

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MARINE GRADE ALUMINIUM HINGED COVERS AA413 FLUSH FITTING HINGED COVERS

AA413 hinged covers are constructed from AAI 30mm deep flooring system & therefore retains the ribbed Ant-i slip top surface. This cover is ideal for use in pedestrian areas and will be made to suit the opening size required. The covers are hinged and can be supplied with AAI integrated lifting handles, and can also be supplied with gas struts to assist the opening & closing of the covers.

Locking lugs can be provided to the covers, which enable padlocks to be fitted to prevent unauthorised access.

These covers can be provided pre assembled, complete with AAI's standard curb frame for fitting to opening in concrete floors / roofs, (note the standard 75x75 rebate will be required around the opening), or can be integrated into our flooring system as part of a bigger platform / flooring area.

AAI413 covers are provided from either the open or solid type flooring and can also be provided with the AAI's double neoprene seals to enhance odour control & deter water ingress.



AA414 – RAISED HINGED COVERS

AA414 hinged covers are constructed from marine grade 6082 to BS EN 573 & BS EN 755 aluminium materials, offering excellent strength & corrosion resistance. The top cover, (being assembled from AAI's specially extruded perimeter frame and a cover plate available with a ribbed top surface), hinges onto AAI's base frame and is complete with integral rubber seals for odour control. The base frame is seated on neoprene gasket and secured to the support structure with suitable stainless steel anchors.

This cover is ideal for use on roof slabs & roof walkways and will be made to suit the opening size required. The covers are hinged and are supplied with AAI lifting handles / locking lugs, and can also be supplied with gas struts to assist the opening and closing of the covers. The covers are available upon request with a secondary internal hinged safety grille.



Fitting a padlock to the locking handle will prevent unauthorised access.

These covers are provided pre assembled for bolting direct to the concrete or platform opening / support structure.

Covers are individually numbered to facilitate easy identification for installation on site, with the assistance of layout drawings provided.

Finish: Anodised AA20

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MARINE GRADE ALUMINIUM FLOORING – ODOUR CONTROL AA412 ODOUR CONTROL FLOORING

AA412 flooring is 30mm deep solid top complete with perimeter rubber seals to give a substantial seal.

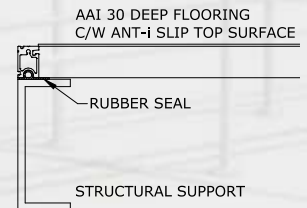
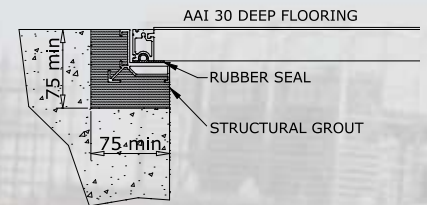
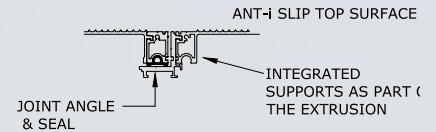
Benefiting from a high strength to weight ratio this system is also virtually maintenance free. Integrated stiffeners give the floor system large span capabilities thus reducing the number of supports necessary. The floor system is complete with a ribbed top surface that provides a firm sure footed ANT-i slip grip which is further enhanced by serrating.

Neoprene double seals are specially produced to fit into the flooring / edge bar profile, to provide a substantially sealed odour control system and is provided with a edge extrusion / seal at all of the panel joints.

AA412 series flooring is supplied in pre fabricated panels constructed from standard interlocking sections locked together with specially designed end bars, (binding / nosing bars). Any cut-outs that are required are incorporated at the manufacturing stage accommodating pipework, cables and services etc.

Floor panels are individually numbered to facilitate easy identification for installation on site, with the assistance of layout drawings provided. Specially designed curbing is also available, as illustrated, where flooring to trench / chamber rebates is required.

Finishes include Self colour (untreated), Anodised or Polyester coated.



AA412 odour control flooring with perimeter rubber seals to give a substantial seal. Extruded interlocking planks are pre-fabricated to the required panel sizes, locked together with AAI end bars. Floor complete with ANT-i slip top Surface.

Flooring from aluminium "marine" alloy grade 6082 T6 to BS EN 573 & BS EN 755

ALUMINIUM LARGE SPAN ODOUR COVERS—TYPE AA440

With the supply of access and safety products to the Water and Sewage Industry worldwide, AAI prides itself in supplying a highly efficient service & quality end product.

Utilising high grade aluminium materials, AAI offer a wide range of covers to meet each projects individual requirements.

The supply of large span odour control covers is one of the services offered as part of the AAI range, which are designed and manufactured in accordance with the specific structure requirements and specifications.

With a long history in the use of marine grade, structural aluminium, large span trusses are designed and developed to provide large span self supporting trusses / covers, to eliminate the need for intermediate supports and therefore utilise the space below without obstruction.

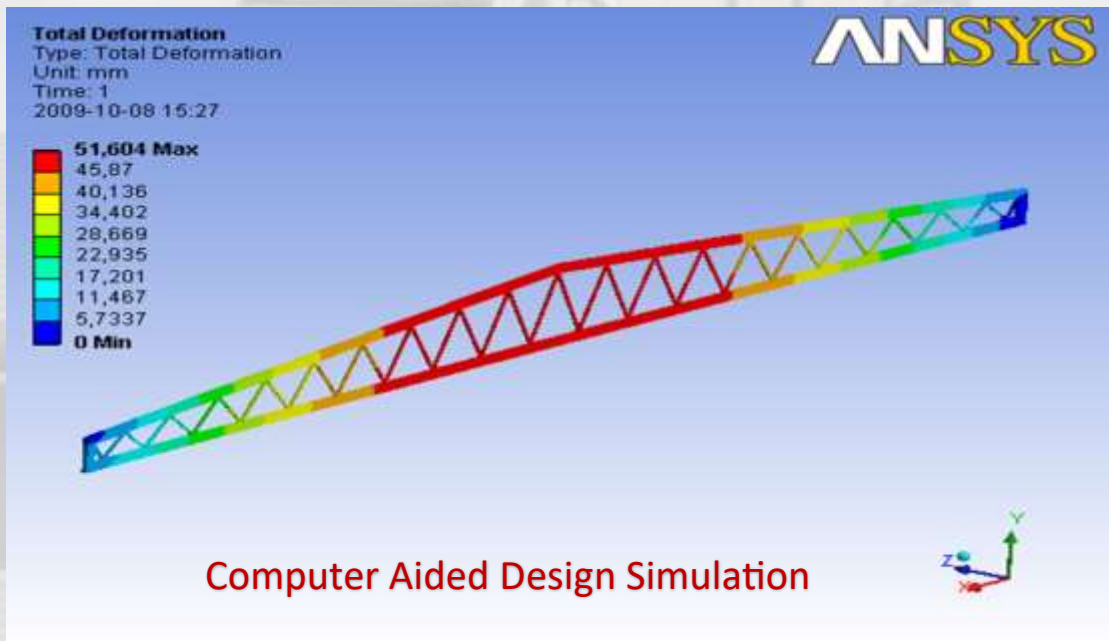
The larger span covers are typically designed to a lightweight loading criteria, more for an odour control system, however can be complete with designated walkway area's, either to access viewing points, or for access across the cover itself.

Aluminium's excellent properties allow fewer design constraints. With aluminium's low density and therefore low weight but high strength, malleability, ease of machining and excellent corrosion resistance and conductivity make AAI's aluminium truss system, a much more favourable choice over traditional materials such as steel, concrete and GRP.

With a density one third that of steel, the large span trusses / covers, offer a considerably more lightweight product, which will provide easier installation, lower plant costs and will impose less loading on the structure concerned.

Although aluminium provides its own corrosion resistance via oxidation, provided with an anodised finish, this enhances the strength of the natural corrosion protection to give a long term sustained resistance to the environment.

In order to maximise the truss strength, with the minimum amount of materials, each truss is designed with full calculations and stress analysis of all members and sections.



Full CAD drawings are provided in line with the design giving layouts, sections, elevations and details for client approval, prior to the manufacturing process.

AAI offer a full installation service using dedicated installation crews. Alternately, In conjunction with our Installation Manual and the assistance of one of our qualified Engineers, we will guide you through the installation processes required to ensure a safe and correct fit of the product on site.

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INSTALLATION OF ANODISED ALUMINIUM ODOUR CONTROL COVER ROOF



RAISED ODOUR CONTROL COVER TO BIOREACTOR TANKS—DOHA NORTH



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ALUMINIUM AVIATION ACCESS PLATFORMS—TYPE AA470

Our aviation access platforms are designed with soft edged buffers to avoid aircraft damage. The scaffold platforms can also be colour coded according to the aircraft for which they have been designed. This enables MRO staff to quickly deploy the correct system when required.

- Safe and easy access
- Rapid deployment
- Robust lightweight structures
- Constructed from our aluminium extrusions
- Corrosion resistant
- Non-slip aluminium decks and treads
- Hi-vis soft edged buffers
- Complies with 'Working at Heights' and 'Health & Safety' regulations
- Manufactured under the following procedures: ISO 9001, ISO 14001 Environmental, OHSAS 18001 and FM 00435



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RAIL— MARINE GRADE ALUMINIUM EMERGENCY ESCAPE WALKWAYS

Our Aluminium marine grade hard anodised chequer plate walkways with aluminium supports are designed and manufactured to a very high tolerance ensuring the structure can be installed to a high degree of accuracy allowing the gap between train and walkways to be maintained within the specified range.

The edges of the walkways are fitted with EPDM 75 rubber buffers and the undersides can be fitted with Sonotec Acoustic Boards.

The below example was supplied to HKACE-JV in Hong Kong for the Tuen Mun to Siu Hong MTR light rail.

West Rail was Hong Kong's largest construction project and also the biggest capital expansion project ever undertaken by the Kowloon-Canton Railway Corporation.

Ant Access successfully supplied and installed the 7km escape walkway on an accelerated program with a site management team overseeing up-to 100 men installing the equipment.



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ALUMINIUM PENSTOCK COVERS / SURROUND—TYPE AA460

AA460 Penstock covers / surrounds are designed for odour containment, in circumstances where the installation of penstocks create substantial openings that allow the omission of resident gasses / odours.

Supplied in kit form, to be built around the penstocks, these covers / surrounds will offer substantial containment of the odours produced in the flows that the penstocks control, whilst retaining access to the hand wheels or actuators. Made from high grade aluminium materials, AAI offer bespoke fabrications to suit each penstock and coupled with rubber seals and gaskets provide substantial odour control and full isolation from dissimilar metals. The penstock covers can be provided for penstocks installed to concrete structures, as well being provided and integrated within our aluminium walkways / platforms.

Although aluminium provides its own corrosion resistance via oxidation, provided with an anodised finish, this enhances the strength of the natural corrosion protection to give a long term sustained resistance to the environment.

Full CAD drawings are provided in line with the design giving layouts, sections, elevations and details for client approval, prior to the manufacturing process.

AAI offer a full installation service using dedicated installation crews. Alternately, in conjunction with our Installation Manual and the assistance of one of our Qualified Engineers, we will guide you through the installation processes required to ensure a safe and correct fit of the product on site.



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ALUMINIUM MARINE BRIDGES / WALKWAYS—TYPE AA450

AA450 Marine Walkways further expand the range of products available.

Designed for access to floating jetties, pontoons, or rafts, these walkways / bridges are again supplied to suit each individual application. With a fixed point swivel anchorage one end and rollers the other, this enables the walkways to self adapt to the fluctuating water levels that tide produce, as well as allowing pontoon or raft the movement required when buoyant.

Utilising high grade aluminium materials, AAI offer bespoke fabrications to suit each requirement.

Aluminium's excellent properties allow fewer design constraints. With aluminium's low density and therefore low weight but high strength, malleability, ease of machining and excellent corrosion resistance and reflectivity make AAI's aluminium marine walkway system a much more favourable choice over traditional materials such as steel, concrete, GRP and Timber.

Again, due to its density, these aluminium walkways offer a considerably more lightweight product, which will provide easier installation, lower plant costs and will impose less loading on the structure concerned.

Although aluminium provides its own corrosion resistance via oxidation, provided with an anodised finish, this enhances the strength of the natural corrosion protection to give a long term sustained resistance to the environment.

Each walkway is designed with full calculations and stress analysis of all members and sections, in order to keep weight to a minimum, whilst retaining the strength required for the required loadings imposed.

Full CAD drawings are provided in line with the design giving layouts, sections, elevations and details for client approval, prior to the manufacturing process.

AAI offer a full installation service using dedicated installation crews. Alternately, in conjunction with our Installation Manual and the assistance of one of our qualified Engineers, we will guide you through the installation processes required to ensure a safe and correct fit of the product on site.

Load test reports by Lloyds British available upon request .



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STAINLESS STEEL OPEN TYPE RECTANGULAR PATTERN FLOORING AA510

AA510 is open type stainless steel flooring, constructed from flat rectangular bar and round cross twist bars, formed as a unit by being pressed together under high pressure, whilst electrically welded at the same time.

The special construction offered by forge welded gratings provide a high resistance to twisting, bending and distortion.

AA510 flooring is supplied in pre-fabricated panels, completed panels having binding bars welded to the panel ends / sides and cut-outs. Gratings can be provided with plain, or machine-serrated bearing bars.

Each floor type is supplied with bearing bars either 3 or 5mm thick and from 20mm to 50 deep, to suit differing load / span criteria, as well as authority specification.

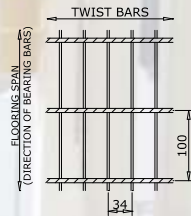
Floor panels are individually numbered for easy identification and installation on site, with the assistance of layout drawings provided.

All open type flooring that is to be used as a walkway or platform is required to be of such construction that a 35mm sphere cannot fall through (cat A). Where machinery / access is directly above where personnel work or congregate, this should be further reduced to prohibit a 20mm sphere, (cat B), in accordance with BS EN ISO 14122

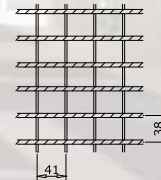
Note for Cat A – AA510 & 511 flooring should be used
Cat B – AA512 & 513 flooring should be used

AA510 flooring is generally secured to the support structure via standard clamp type clips, or shot fired stud and top disc / spacer washer.

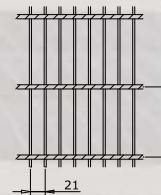
Panels are generally supplied self colour, (un-treated), pickled and passivated and/or electro polished.



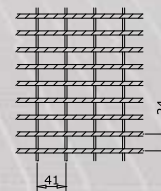
AA510
34/100 FLOORING



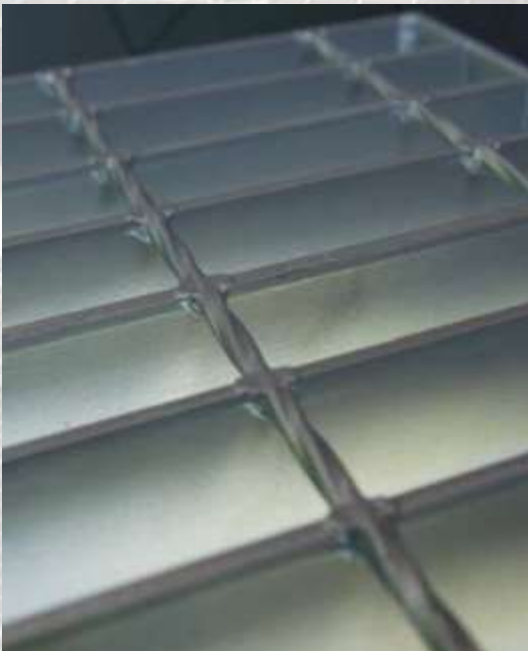
AA511
41/38 FLOORING



AA512
21/100 FLOORING



AA513
41/24 FLOORING



SECTION	Maximum walkway width for clear span	
	5.0 Kn/M2	7.5kN/m2
20 x 3	680	680
25 x 3	895	895
30 x 3	1075	1075
40 x 3	1400	1400
25 x 5	1050	1050
30 x 5	1250	1200
40 x 5	1650	1550
50 x 5	2050	1800

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STAINLESS STEEL ACCESS LADDERS—AA520

Access ladders are designed for access to platforms and structures where use of a stair is not suitable.

Ladders are 380mm min between stringers, complete with rungs at 300 max ctrs.

For the AA520 ladder type, the stringers are opened out to 700mm to a walk-through and is complete with a three rung step section. For ease of transport / installation, ladders can be spliced.

Ladders are secured with stays at generally 2500 ctrs, although this may increase if larger stringer sections are used.

Safety cages or fall arrest systems are an essential requirement for ladders where a user could fall 3m or more or come into contact with dangerous equipment. Safety cages should start 2400mm from FFL and have hoops in line with the handrail ctrs to the head and 900mm max spacing there-after.

Inclined ladders should be set at 75° or steeper.

Landings where required should not be less than 840mm square complete with handrails and toe plates to protect open sides.

Material: Stainless steel grade 316L to provide the best possible corrosion resistance. Grade 304 could be used for less aggressive environments.

Ladders stringers and walk-through:

Generally 65x13 flat bar minimum, c/w 20mm dia solid rungs.

Stringers can be manufactured from larger flat bar or angle sections, if fixing ctrs are limited.

Safety Cage, (hoops & straps):

50x8 flat bar.

Ladder stays:

Generally flat bar of the same section as the ladder stringers.

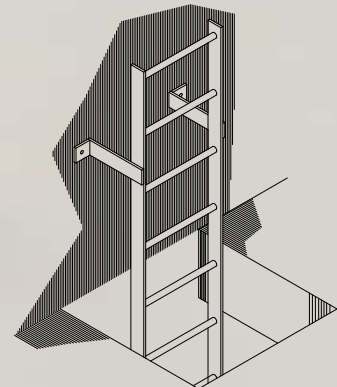
Note:

Safety chains should be provided to ladders with walk-through's, to guard against falls.

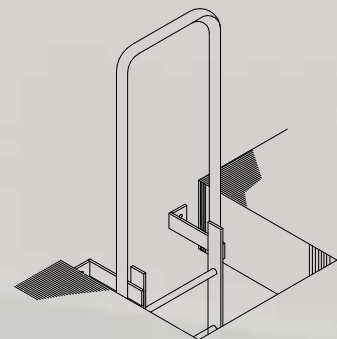
All fixings to be stainless steel grade 316 (A4)

Finishes include:- Self-colour, pickle and passivate and electro polished.

Direct contact with materials such as aluminium or copper should be avoided, however use of suitable isolating gaskets should eliminate any problems with this.



AA521 - LADDER
EXTENDED ABOVE
FFL, FOR HANDHOLD



AA522 - LADDER
WITH RETRACTABLE
HANDHOLD

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Company Registration No. 9757513

TUBULAR -BALL TYPE RAIL—TYPE AA500

This is a stainless steel handrail system and manufactured from grade 316 material. Differing finishes means this is a versatile system which can be used in aggressive / corrosive environments, as well as being used for feature handrails.

All parts are totally pre-fabricated before delivery in accordance with bespoke drawings prepared for every individual contract. Each piece of handrail is marked to facilitate identification, this in conjunction with the drawings provided, ensure quick trouble free assembly.

Generally handrails should be not less than two rails in the same plane, however on companion way ladders and on stairs bounded by a wall a single handrail should be fitted. Handrails should be continuous and to avoid injury or damage, rails should terminate in a returned end. All joints are concealed within the ball via an internal groove type ferrule.

Resistance to loads imposed by the handrails and fixings should be considered when designing the structure that the handrails are intended to be attached to.

Handrail standard make up will vary according to the shank type require for the determined loading / specification. This will affect in turn the ball diameter needed.

Base plates will normally be welded on to the shanks and drilled to received M12/M16 bolts as required. Larger / thicker bases may be required to those shown for heavier duty loading.

Finishes:

Self Colour (untreated)

Pickled & passivated

Brushed Matt

Electro-polished, (following pickle/passivation)

Loadings should be defined in BS6180:1995, BS EN ISO14122: 2001, BS5395 Part 3:1985 & BS6399 Part 1:1984



HANDRAIL STANDARD / SPACING GUIDE

Tubular and solid standards.

Max spacing based on a design height of 1100mm, standards complete with a flat base, secured to steelwork. Note where handrail heights exceed 1100mm spacing's should be checked for suitability.

Direct contact with some metals such as Copper or Aluminium, should be avoided. Use of suitable isolation materials will alleviate any problems.

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Handrail Standard	Handrail	Horizontal Design Load				
		0.22 kN/m	0.36 kN/m	0.50 kN/m	0.74 kN/m	1.00 kN/m
Tubular						
33.7 mm o.d. x 3.0 mm	33.7 mm o.d.	1650 mm	1075 mm	750 mm	-	-
42.4 mm o.d. x 3.0 mm	33.7 mm o.d.	2000 mm	1850 mm	1450 mm	1050 mm	-
42.4 mm o.d. x 3.0 mm	42.4 mm o.d.	2000 mm	1900 mm	1500 mm	1100 mm	-
48.3 mm o.d. x 3.0 mm	42.4 mm o.d.	2000 mm	2000 mm	2000 mm	1500 mm	1200 mm
48.3 mm o.d. x 4.0 mm	42.4 mm o.d.	2000 mm	2000 mm	2000 mm	1700 mm	1400 mm
60.3 mm o.d. x 4.0 mm	48.3 mm o.d.	2000 mm	2000 mm	2000 mm	2000 mm	1800 mm
Solid						
32 mm o.d.	33.7 mm o.d.	2000 mm	1350 mm	1100 mm	-	-
38 mm o.d.	42.4 mm o.d.	2000 mm	2000 mm	1800 mm	1400 mm	1100 mm
40 mm o.d.	42.4 mm o.d.	2000 mm	2000 mm	2000 mm	1650 mm	1250 mm

LOADS ARE UNFACTORED — PLEASE CONTACT US SHOULD FACTORED LOADING BE REQUIRED



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TUBULAR -BALL TYPE RAIL—TYPE AA700

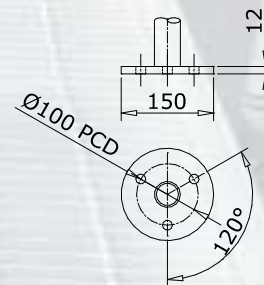
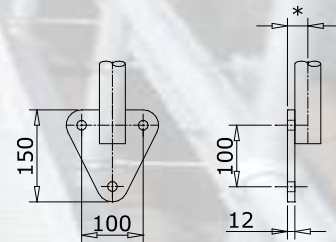
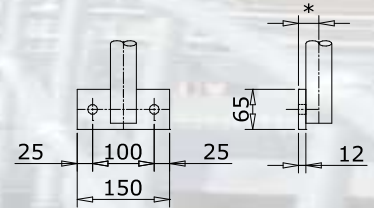
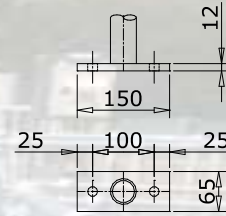
This mild steel handrail system is widely used in civil and industrial environments. All parts are totally pre-fabricated before delivery in accordance with bespoke drawings prepared for every individual contract. Each piece of handrail is marked to facilitate identification, this in conjunction with the drawings provided, ensure quick trouble free assembly. Generally handrails should be not less than two rails in the same plane, however on companion way ladders and on stairs bounded by a wall a single handrail should be fitted. Handrails should be continuous and to avoid injury or damage, rails should terminate in a returned end.

When designing fixings, connections, supporting brackets and other supports, the design loads for the components should be multiplied by an additional nominal factor of 1.5 (BS6180). We recommend that the spacing of standards with fixings to concrete should not exceed 1.5 metres to limit stress on fixings.

Handrail standard make up will vary according to the shank type require for the determined loading / specification. This will affect in turn the ball diameter needed.

Base plates will normally be welded on to the shanks and drilled to received M12/M16 bolts as required. Larger / thicker bases may be required to those shown for heavier duty loading.

Handrail standards will usually be supplied Galvanised to BS EN ISO1461, but can be supplier either self colour or primer painted, (for site finishes). Loadings should be a defined in BS6180, BS EN ISO14122, BS5395 Part 3 & BS EN 6399 Part 1:1991



HANDRAIL STANDARD / SPACING GUIDE

Tubular and solid standards.

Max spacing based on a design height of 1100mm, standards complete with a flat base, secured to steelwork.

Note where handrail heights exceed 1100mm spacing's should be checked for suitability.

Loads are unfactored – please contact us should factored loading be required.

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GMS OPEN TYPE RECTANGULAR PATTERN FLOORING TYPE AA710

AA710 is open type mild steel flooring, constructed from flat rectangular bar and round cross twist bars, formed as a unit by being pressed together under high pressure, whilst electrically welded at the same time.

The special construction offered by forge welded gratings provide a high resistance to twisting, bending and distortion.

AA710 series flooring is supplied in pre-fabricated panels, completed panels having binding bars welded to the panel ends / sides and cut-outs. Gratings can be provided with plain, or machine-serrated bearing bars.

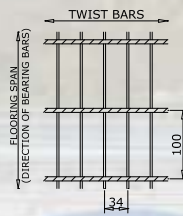
Each floor type is supplied with bearing bars either 3 or 5mm thick and from 20mm to 50 deep, to suit differing load / span criteria, as well as authority specification.

Floor panels are individually numbered for easy identification and installation on site, with the assistance of layout drawings provided.

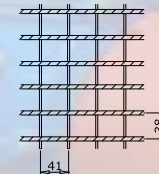
All open type flooring that is to be used as a walkway or platform is required to be of such construction that a 35mm sphere cannot fall through (Cat A). Where machinery / access is directly above where personnel work or congregate, this should be further reduced to prohibit a 20mm sphere, (Cat B), in accordance with BS EN ISO 14122.

Note for Cat A – AA710 & 711 flooring should be used
Cat B – AA712 & 713 flooring should be used

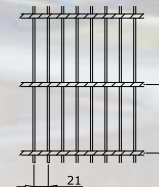
AA710 flooring is generally secured to the support structure via standard clamp type clips, or shot fired stud & top disc / spacer washer. Panels are supplied galvanised to BS EN ISO1461.



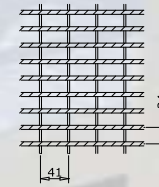
AA710
34/100 FLOORING



AA711
41/38 FLOORING



AA712
21/100 FLOORING



AA713
41/24 FLOORING

The table below gives a quick reference guide to the clear spans achieved by the most commonly used 34/100 pitch grating. Note from the illustration opposite, the clear span is the distance between the supports, not the walkway width.

5kN/m² – General Duty Loading
7.5kN/m² – Heavy Duty Loading

SECTION	Maximum walkway width for clear span	
	5.0 Kn/M2	7.5kN/m2
20 x 3	680	680
25 x 3	895	895
30 x 3	1075	1075
40 x 3	1400	1400
25 x 5	1050	1050
30 x 5	1250	1200
40 x 5	1650	1550
50 x 5	2050	1800



GALVANISED MILD STEEL ACCESS LADDERS TYPE—AA720

Access ladders are designed for access to platforms and structures where use of a stair is not suitable.

Ladders are 380mm min between stringers, complete with rungs at 300 max ctrs.

For the AA720 ladder type, the stringers are opened out to 700mm to a walk-through and is complete with a three rung step section. For ease of transport / installation, ladders can be spliced.

Ladders are secured with stays at generally 2500 ctrs, although this may increase if larger stringer sections are used.

Safety cages or fall arrest systems are an essential requirement for ladders where a user could fall 3m or more or come into contact with dangerous equipment.

Safety cages should start 2400mm from FFL and have hoops in line with the handrail ctrs to the head and 900mm max spacing there-after.

Inclined ladders should be set at 75° or steeper.

Landings where required should not be less than 840mm square complete with handrails and toe plates to protect open sides.

Material: Mild steel grade S275-JR

Ladders stringers and walk-through:

Generally 65x13 flat bar minimum, c/w 20mm dia solid serrated rungs.

Stringers can be manufactured from larger flat bar or angle sections, if fixing ctrs are limited.

Safety Cage, (hoops & straps):

50x8 flat bar.

Ladder stays:

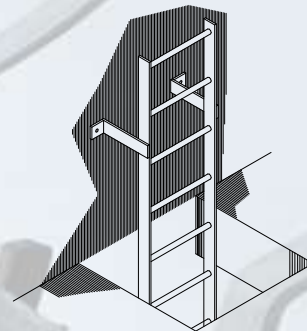
Generally flat bar of the same section as the ladder stringers.

Note:

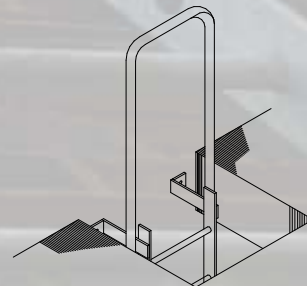
Safety chains should be provided to ladders with walk-through's, to guard against falls.

All xox fixings are galvanised / bzp, anchors to concrete will be as specified.

Finish- Galvanised to BS EN ISO1461.



AA721 - LADDER
EXTENDED ABOVE
FFL, FOR HANDHOLD



AA722 - LADDER
WITH RETRACTABLE
HANDHOLD

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GALVANISED MILD STEEL STAIRS—TYPE AA730

AA730 galvanised mild steel stairs are provided in accordance with BS EN ISO 14122 & BS 5395, which should be consulted during the design of any single / multi flight stairs.

General Considerations:

Individual stair flights should not exceed 3000mm rise between floor or landing levels, nor contain more than 16 risers. The preferred stair pitch is from 30 to 38°, although for a private stairs up to approx. 42° is acceptable.

Handrails to the stair flight should be between 900mm and 1000mm high from the pitch line, with handrails to landings 1100mm min – both cases complete with intermediate rails.

Treads and risers should be pitched such to afford comfortable gait – please refer to the table in BS 5395, however approx. 250mm going and 190mm rise is typical.

For stairs with open risers, the nosing of any tread or landing should overlap the back of the tread below by not less than 16mm.

Assembly stairs exceeding 36 risers in consecutive flights, should have at least one change of direction between flights, (min 30°).

Headroom, (vertical distance from FFL), over stairs and landings should not be less than 2000mm with a clearance, (distance perpendicular to the pitch line) of at least 1500mm. For stairs of 3 steps or less this should be increased.

Materials:

Stringers – Generally flat bar, or channel section.

Handrails – Generally as per AA1700 series, although welded handrail or balustrade is available if required / specified.

Flooring and Treads – Generally per AA1710 series, although chequer / solid plate treads are available if required / specified.

FINISH: Galvanised to BS EN ISO1461



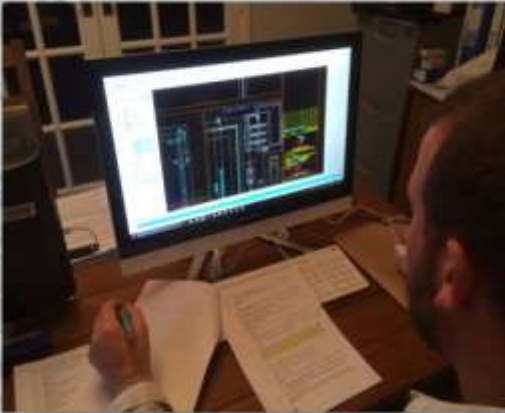
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ANT ACCESS

INTERNATIONAL LTD



Ant Access International designers have a lifetime of experience in the industry. Able to fully interpret the requirements of the contract and translate this into a CAD drawing for client/consultant approval.

All aluminium products are produced in the UK and will be shipped with material certificates showing full compliance with QCS specification.



3-Axis and 5-Axis CNC Multi Head machines capable of handling up to 12mt lengths are able to manufacture components faster, more efficiently and accurately saving time and money.

All of our welders are trained to use both TiG and MiG welders depending on the product requirements.



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More complex fabrications will be shop assembled to ensure all parts fit correctly. Product will then be dismantled and placed into its own uniquely marked case to ensure ease of identification on site.

Aluminium Foundry. Molten ingots are used to produce high pressure castings in either LM6 or LM25. Both marine grade alloys.



Anodising is an electrochemical process used to produce durable and decorative finishes on components made of aluminium or aluminium based alloys.

Inspection and packaging of goods ensures that products comply with the detail drawings. Packing lists are created at this point to match up the detail drawings with individual marking of components and case numbers.



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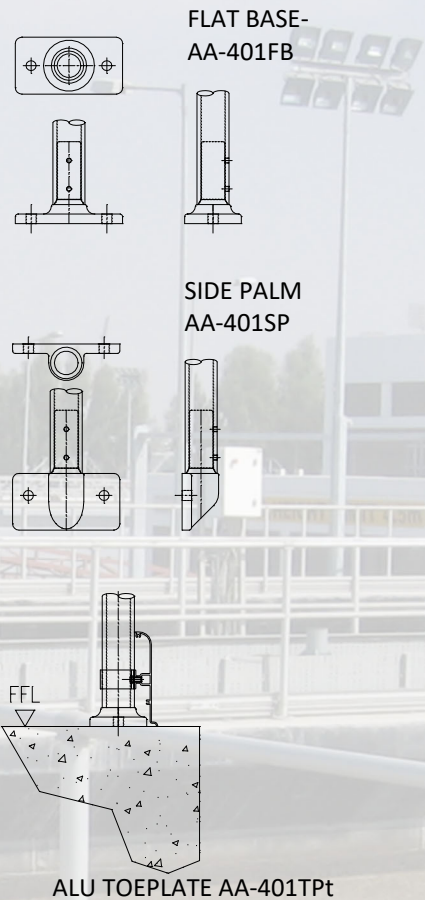
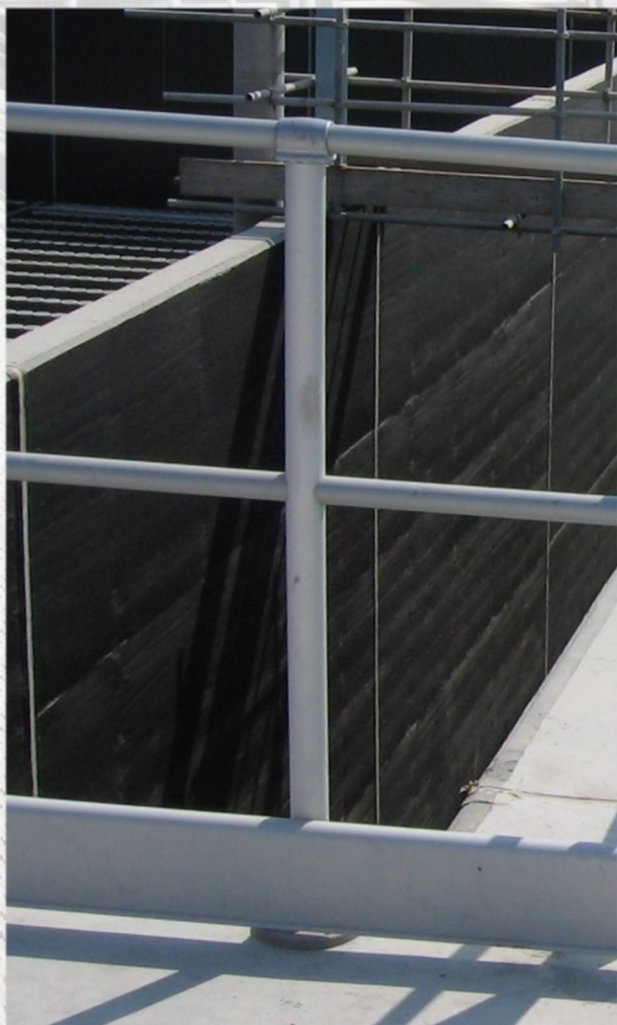


TUBULAR MARINE GRADE ALUMINIUM HANDRAIL AA401 HANDRAIL

AA401 is a versatile heavy duty aluminium handrail system, constructed from marine grade aluminium alloy materials designed to give maximum strength. AA401 is suited to most situations and is tailor made in component form to suit each individual installations, or in stock lengths for on site fabrication. The aluminium construction offers excellent corrosive resistance in its natural state, this may be further enhanced with surface treatment such as anodising.

The handrails are generally supplied in pre-formed/fabricated bends, being individually marked for easy identification & assembly on site, with the assistance of layout drawings provided. Straight sections of handrail are supplied in standard 6 Mtr lengths for site cutting / assembly.

Where handrails are provided for attaching to customers equipment or to building structures, adequate consideration must be given to the design of such structures to resist any loads imposed by the handrails and fixings.



The AA401 aluminium handrail system is supplied from heavy duty aluminium posts of 50.8mm dia shank, with 38.1mm o/d top and intermediate handrails. The post is drilled to receive the intermediate rail, whilst the top rail is secured via a die cast tee section, all secured via stainless steel grubscrews. The post is supported on high duty heat treated die cast bases, generally drilled to receive M12 fixings. 150mm high toeplate is supplied as required, secured to the handrail posts. 3 hole bases are available if specified / required.

Materials:

Top Tee Section – BS EN 1676
 Bases – BS EN 1676
 Handrail Tube – BS EN 573 & BS EN 755
 (grade 6082)

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ANT ACCESS INTERNATIONAL LTD

Global Suppliers of Quality Handrails, Staircases, Ladders, Platforms & Covers in Aluminium, Stainless Steel and Mild Steel Galvanised



CHAMBER COVERS



CHAMBER COVERS AND SUPPORTS ARE SUPPLIED IN MARINE GRADE 6082-T6 ANODISED ALUMINIUM

ANT ACCESS ORIGINAL DESIGN FLOOR ANCHOR MOUNTS ARE SUPPLIED TO ALL 4 CORNERS OF THE COVERS. THE DESIGN PREVENTS PANELS FROM SLIPPING AT ALL TIMES AND THE FIXING SCREWS ARE CAPTIVE INTO PANELS SO THEY CANNOT BE REMOVED AND LOST.

LIFTING HANDLES ARE FLUSH FITTING TO PREVENT INGRESS OF SAND AND STONES.

SPINDLE ACCESS COVERS LIFT AND HINGE. THE COVERS CAN BE FITTED DURING THE MANUFACTURE PROCESS OR CAN BE SITE INSTALLED TO ENSURE ALIGNMENT WITH THE VALVES BELOW.



RAISED HINGED COVERS



RAISED HINGED ACCESS COVERS WITH INTERNAL SAFETY GRILL

COVERS AND SUPPORT FRAME FABRICATED FROM MARINE GRADE 6082-T6 ANODISED ALUMINIUM

SUPPLIED WITH EPDM RUBBER GASKETS WHERE ODOUR CONTROL IS REQUIRED.

COVERS ARE OPENED WITH THE ASSISTANCE OF HEAVY DUTY ST.ST GAS STRUTS.

ST.ST LOCKING MECHANISM ALLOWS COVERS TO BE PADLOCKED TO PREVENT UNAUTHORISED ACCESS





ANODISED ALUMINIUM ODOUR CONTROL ROOF COVER TO BIO-REACTOR TANKS.

BELOW PHOTO SHOWS THE INSTALLATION OF THE ALUMINIUM SUPPORT TRUSSES, ASSEMBLED WITHIN THE TANK BEFORE BEING CRANED INTO POSITION





ANODISED ALUMINIUM ODOUR CONTROL ROOF COVER WITH ALL COVERS PROVIDING HINGED ACCESS WITH SAFETY GRILL TO ENTIRE ROOF.
BELOW PHOTO SHOWS A CIRCULAR ODOUR CONTROL COVER.



ALUMINIUM GRATINGS



GRATINGS SUPPLIED IN MARINE GRADE 6082-T6 ANODISED ALUMINIUM.

SUITABLE FOR VENTILATION, HIGH VISIBILITY AND FOR RAINWATER.

CAPABLE OF DESIGN LOADS IN EXCESS OF 7.5kN/M²

PICTURE SHOWN HAS ELECTRO-POLISHED STAINLESS STEEL HANDRAILS AND TOEPLATE.





PLATFORMS & STAIRS



ALUMINIUM WALKWAYS,
HANDRAILS AND STAIRCASES
SUPPLIED FOR A PUMP STATION



ALUMINIUM HANDRAILS



HANDRAILS SUPPLIED IN MARINE GRADE 6082-T6 ANODISED ALUMINIUM.

DESIGN LOADS - 0.74 Kn/M

LEFT PICTURE SHOWS ALUMINIUM HANDRAILS TO STAIRCASE WITH ALUMINIUM TREADS C/W GOLD NOSING.







CENTRAL PLENUM EMERGENCY ESCAPE WALKWAY
ALONG LIGHT RAILWAY SYSTEM





ALUMINIUM GANTRY BEING TESTED BY
LLOYDS BRITISH—UK



STAINLESS HANDRAILS



STAINLESS GRATINGS



STAINLESS LADDERS





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incorporating
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