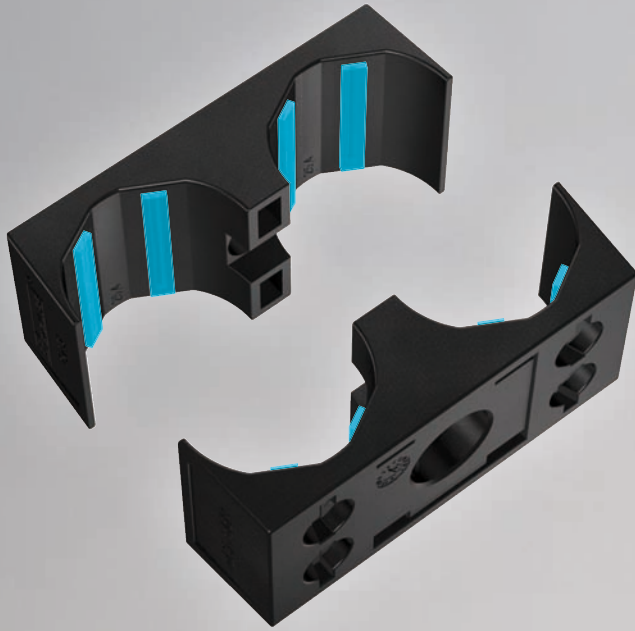




Local Solutions For Individual Customers Worldwide

ACT CLAMP

anti **corrosion** technology



STAUFF ACT Clamp
Anti-Corrosion Technology
Product Catalogue



Main Features

Efficient Prevention of Crevice Corrosion under Pipe Clamps on Stainless Steel Pipework Middle- and Long-Term Cost Savings due to Extended Service and Maintenance Intervals

Construction based on STAUFF Clamps

- Constructed according to DIN 3015, Parts 1 and 3 (Standard Series and Twin Series)
- Tried and tested industry standard for several decades
- Covering the most commonly used metric and imperial pipe diameters from 6 mm to 25,4 mm (from 1/4 inch to 1 inch)
- Alternative configurations and pipe diameters on request
- Interchangeable and usable with all other standard STAUFF components; mounting hardware available ex stock in different stainless steel qualities
- Installation time reduction (compared to alternative designs)

Independent Testing and Approval

- Subject to stringent testing at the STAUFF in-house laboratories located in Werdohl (Germany)
- Salt spray tests according to ASTM B117 applied in controlled laboratory environments
- Long-term field tested on a rig in the Dutch sector of the North Sea
- Tests results independently assessed by Centre for Corrosion Technology at Sheffield Hallam University
- Fully detailed, independent test reports available on request

Innovative Design and Materials

- Material and design in compliance with the Norwegian offshore standard Norsok Z-010 (Revision 3) published in October 2000 (Section 7.3: Tubing Installation)
- Clamp body made of flame-retardant PPV0 plastic material; tested and V0 classified according to UL 94 (1)
- Integrated ACE anti-corrosion elastomer strips avoid the accumulation of seawater between clamp body and pipe (2)
- Drainage channels aid the dispersal of seawater (3)
- High UV stability of the clamp body material; resistant against seawater, rain and oil
- To be used in sub-sea and top-side environments; alleviating the requirement for two different products



Design

STAUFF ACT Clamps are an innovatively designed solution for the installation of instrumentation pipework where anti-corrosion properties are of paramount importance (e.g. in the fields of offshore oil and gas exploration and processing).

The design – based on the tried and tested STAUFF Clamps according to DIN 3015 – offers installation time reduction and long term cost savings due to extended service intervals.

The STAUFF ACT clamp body design is available for the Standard Series (DIN 3015, Part 1) and the Twin Series (DIN 3015, Part 3) to cover the most commonly used metric and imperial pipe diameters from 6 mm to 25,4 mm (1/4 inch to 1 inch).

Development

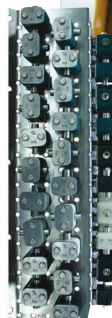
Throughout their development, STAUFF ACT Clamps have been subject to stringent testing at the STAUFF in-house laboratories located in Werdohl, Germany.

In order to ensure credibility of the product, the development process has also involved independent testing.



To achieve this, the services of the Centre for Corrosion Technology at Sheffield Hallam University's Materials and Engineering Research Institute have been utilized, applying advanced techniques with equipment such as high resolution surface metrology and form measurement systems.

In a controlled laboratory environment, continuous hot salt spray tests according to ASTM B117 have been applied for periods of 2000 hours to various clamp configurations holding AISI 316 stainless steel tubing.



In addition to that, independent field test samples – located on an oil rig in the Dutch sector of the North Sea – have also been assessed at the Sheffield Hallam University facilities.

Both independent tests have recorded positive results in favour of the anti-corrosion attributes of the STAUFF ACT Clamp. Fully detailed test reports are available upon request.

Conformity

Using flame-retardant PPV0 plastic material for the clamp body and ACE anti-corrosion elastomer material for the rubber strips, STAUFF ACT Clamps have been constructed in compliance with the Norwegian offshore standard Norsok Z-010.

The Norsok Organisation



Norsok is a Norwegian industry initiative to add value, reduce cost and lead time and remove unnecessary activities in offshore field developments and operations.

The Norsok standards are developed by the Norwegian petroleum industry and are jointly issued by the Norwegian Oil Industry Association (OLF) and the Federation of Norwegian Engineering Industries (TBL). They are administered by the Norwegian Technology Standards Institution (NTS).

The purpose of the Norsok industry standards is to replace the individual oil company specifications for use in existing and future petroleum industry developments, subject to the individual company's review and application.

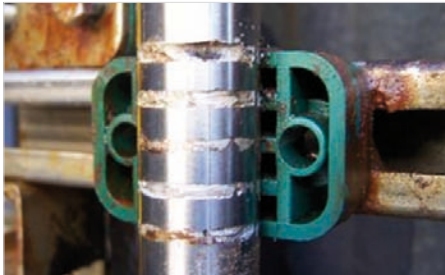
The Norsok standard Z-010 (Revision 3) published in October 2000 (Section 7.3: Tubing Installation) states the following:

"Tubing clamps shall be made of non-corrosive material, stainless steel AISI 316 and/or flame retardant plastic. Galvanic corrosion between tubing and tubing support system shall be avoided.

The tubing clamp shall, when installed, not allow for water / seawater to be accumulated between tubing and tubing clamp on wall, this is to avoid crevice corrosion."



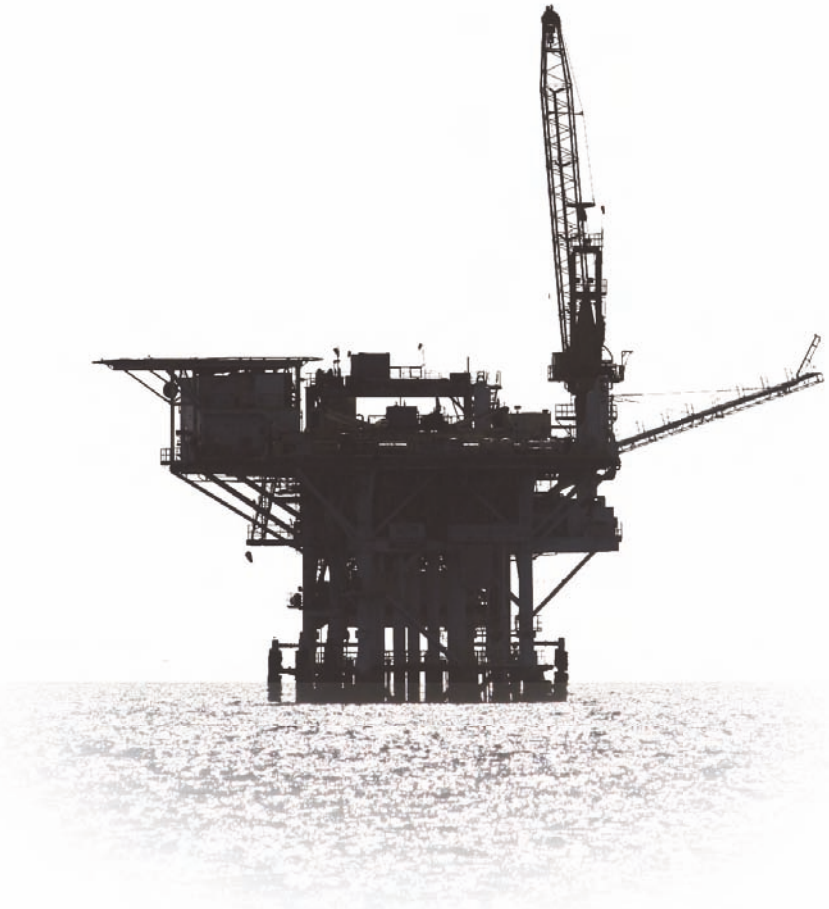
Instrumentation pipework made of stainless steel



Crevice corrosion formed under a plastic clamp



Crevice corrosion formed under a plastic clamp



Stainless Steel Pipework

Stainless steel pipework on offshore oil and gas platforms is used over a wide range of temperature, flow and pressure conditions, e.g. for process instrumentation and sensing, as well as for chemical inhibition, hydraulic or utility lines.

The typical tubing material selected for these particular applications is AISI 316 stainless steel, although in more recent times other tube materials have been utilized to try and counteract the offshore corrosion issue.

In all major offshore oil and gas regions – including the Gulf of Mexico, the North Sea, the Gulf of Guinea and the China Sea – corrosion of AISI 316 stainless steel pipework can be observed, and has been a researched and well documented problem as well as a costly and time consuming issue with regard to maintenance processes for many years.

Pitting Corrosion

One of the most prevalent forms of localised corrosion is pitting corrosion: Under certain specific conditions – particularly involving chlorides (such as sodium chloride in seawater) and exacerbated by elevated temperatures – small pits can form in a stainless steel surface.

Dependent upon both the environment and the stainless steel itself, these pits may continue to grow and eventually lead to perforation of tubing walls and leaks, while the majority of the surface may still be totally unaffected.

Pitting corrosion is often quite easy to recognise: small individual pits and – in later stages – sometimes deeper and connected pits can be observed by visual inspection with the unaided eye.

Crevice Corrosion

Another dominant type is crevice corrosion, which is a lot more difficult to observe: It usually tends to occur in shielded areas such as crevices, formed under gaskets, washers, fastener heads, insulating material, surface deposits, disbonded coatings, threads and lap joints.

Pipe clamps made of plastic in particular have also been prone to inducing crevice corrosion in the past, because the plastic deforms around the tubing and creates even tighter crevices.

Crevice corrosion is always initiated by changes in the local chemistry within the shielded area, usually associated with a stagnant solution on the micro-environmental level:

- Trapped seawater becomes stagnant
- Depletion of inhibitor and oxygen
- A shift to acid conditions
- Build-up of aggressive ion species (such as sodium chloride in seawater)
- Accelerated corrosion process

Crevice corrosion can have serious and adverse consequences eventually leading to perforation of tubing walls and the escape of highly flammable fluids and chemicals.

Material Selection

Hence, the selection of proper materials and the use of robust design and safe construction practices are mandatory, even if crevices are sometimes difficult or even impossible to avoid in tubing installations when using regular types of tubing supports and clamps.

And this is where the STAUFF ACT Clamp comes into play ...

Corrosion Facts

Corrosion in general is a naturally occurring phenomenon commonly defined as the deterioration of a substance (usually a metal) or its properties because of a reaction with its environment. Like other natural hazards, corrosion can cause not only expensive but also dangerous damage to almost everything from automobiles, home appliances and drinking water systems to pipelines, bridges and public buildings.

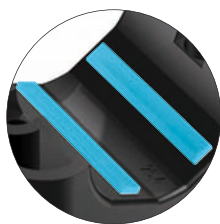
Figures provided by the U.S. National Climatic Data Center underline that major weather related disasters the U.S. incurred total losses of averaging USD 17 billion annually (1980 – 2001). According to U.S. corrosion studies, the estimated direct cost of metallic corrosion in general was USD 276 billion on an annual basis in 1998. This represented 3,1% of the U.S. Gross Domestic Product.

Direct corrosion costs associated with the domestic oil and gas production activities in the U.S. were determined to be about USD 1,4 billion annually, with USD 0,6 billion attributed to surface piping and facility costs, USD 0,5 billion to downhole tubing, and USD 0,3 billion to capital expenditures related to corrosion.

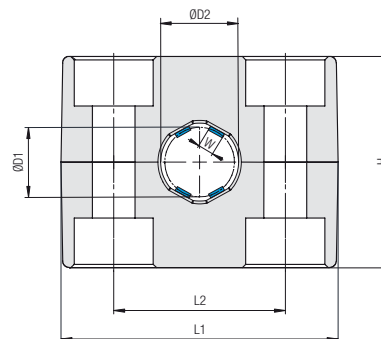
The U.S. refineries represent approximately 23% of the world's petroleum production in 1996 supplying more than 18 million barrels of refined petroleum products per day, with a total corrosion related direct cost of USD 3,7 billion. Maintenance expenses make up USD 1,8 billion of this total, vessel expenses are USD 1,4 billion and fouling costs are approximately USD 0,5 billion annually.

Source of Information: Report No. FHWA-RD-01-156, September 2001 Corrosion Costs and Preventive Strategies in the United States Report by CC Technologies Laboratories, Inc. to Federal Highway Administration Office of Infrastructure Research and Development

Clamp Bodies - Type ACT



Integrated Rubber Strips
made of Anti-Corrosion Elastomer



Order Codes

Clamp Body

Clamp Body, STAUFF Group 1A

***2*12,7*ACT**
***1*06,4*ACT**

One clamp body consists of two clamp halves, each with two integrated rubber strips.

- * STAUFF Group 2
- * Exact outside diameter Ø D1 (mm) 12,7
- * Material code (see below) ACT

Standard packaging unit is 25 clamp bodies per bag.

| Group | Size | Outside Diameter | | Ordering Code (2 Clamp Halves) | Dimensions (mm/in) | | | | | | |
|-------|------|------------------|------|-----------------------------------|--------------------|------------|------------|------------|------------|------------|--|
| | | Ø D1 (mm) | (in) | | ØD2 | W | L1 | L2 | H | Width | |
| 1A | 1 | 6 | | 106A ACT (1130029112) | 9 .35 | 1,4 .06 | | | | | |
| | | 6,4 | 1/4 | 106,4A ACT (1130029113) | 9,4 .37 | 1,5 .06 | | | | | |
| | | 9,5 | 3/8 | 109,5A ACT (1130029114) | 12,5 .49 | 2,2 .09 | 37 1.46 | 20 .79 | 26 1.06 | 30 1.18 | |
| | | 10 | | 110A ACT (1130029115) | 13 .51 | 2,3 .09 | | | | | |
| | | 12 | | 112A ACT (1130029116) | 15 .59 | 2,8 .11 | | | | | |
| 2 | 2 | 12,7 | 1/2 | 212,7 ACT (1130029117) | 15,7 .62 | 3,5 .14 | | | | | |
| | | 14 | | 214 ACT (1130029118) | 17 .67 | 3,5 .14 | 42 1.65 | 26 1.02 | 32 1.30 | 30 1.18 | |
| | | 18 | | 218 ACT (1130029119) | 21 .83 | 3,5 .14 | | | | | |
| 3 | 3 | 19 | 3/4 | 319 ACT (1130029120) | 22 .87 | 3,5 .14 | | | | | |
| | | 20 | | 320 ACT (1130029121) | 23 .91 | 3,5 .14 | 50 | 33 | 35,5 | 30 | |
| | | 21,3 | | 321,3 ACT (1130029122) | 24,3 .96 | 3,5 .14 | 1.97 | 1.30 | 1.42 | 1.18 | |
| | | 25,4 | 1 | 325,4 ACT (1130029123) | 28,4 1.12 | 3,5 .14 | | | | | |

Material Properties



Flame-retardant Polypropylene (PPV0) with integrated rubber strips made of Anti-Corrosion Elastomer (ACE)
Material code: **ACT**

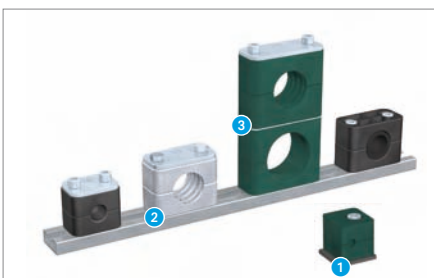
Additional sizes and outside diameters are available upon request. Please consult STAUFF for further information.

Mounting Hardware

STAUFF is positioned to offer a complete range of mounting hardware meeting the demands of customers for most industrial applications.

Typical installation scenarios include:

- 1 Installation on weld plates**
Single, double and group weld plates available
- 2 Installation on mounting / channel rails**
Adaptors for various rail types available
- 3 Multi-level (stacking) installation**
Using stacking bolts and safety locking plates



Typical installation of STAUFF Clamps (Standard Series)

To ensure the full anti-corrosion performance of STAUFF ACT Clamps, it is highly recommended to use stainless steel mounting hardware only. STAUFF is in the position to offer all required mounting hardware ex stock in several stainless steel qualities, including:

- Stainless Steel V4A**
- 1.4401 / 1.4571 (AISI 316 / 316 Ti)
 - STAUFF Material Code: W5



Alternative materials and surface finishes are available upon request. Consult STAUFF for further information.

Spacing and Positioning of STAUFF Clamps

In order to conform with the Norwegian offshore standard Norsok Z-010, correct spacing of pipe and tube clamps has to be observed. The following recommendations are made:

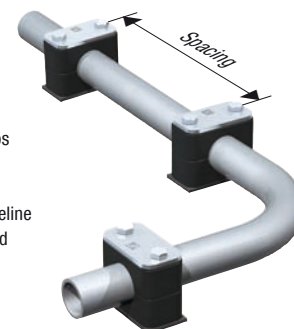
[...] Instrument tubing shall be supported to field trays or cable ladders for tubing sizes less than 16 mm outside diameter. Cable tray, ladder or equal to be used for larger sizes when mechanical protection is required. [...]

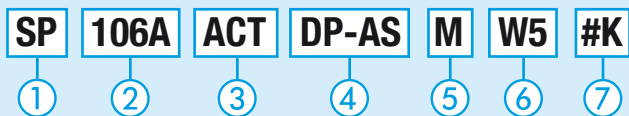
Tubing to be fastened to self drained tubing clamps with span max every 60x tubing diameter (in millimeters). Tubing sizes above 25 mm (.98 in) outside diameter shall as a minimum have support every 1500 mm (4.92 ft). [...]

Please also note the following information on the installation of STAUFF Clamps next to pipe bends, fittings and/or valves:

Pipe bends should be supported by STAUFF Clamps positioned as close to the bends as possible.

If fittings and/or valves are incorporated in the pipeline system, it is recommended that support is provided by STAUFF Clamps located directly next to these components to protect them from vibrations.





① Type of Installation

Please select the type of installation (e.g. weld plates, rail nuts, etc.) and add the corresponding Code to position ① of the order code for your clamp assembly.

Without Installation Equipment
Code: **none**

Installation on Weld Plate

Single Weld Plate
Code: **SP**

Elongated Weld Plate
Code: **SPV**

Twin Weld Plate
Code: **DSP**

Group Weld Plate
Code: **RAP**

Angled Weld Plate
Code: **WSP**

Bridge Weld Plate
Code: **BSP**

Installation on Mounting / Channel Rail

Hexagon Rail Nut
Code: **SMG** (Stainless Steel)

Channel Rail Adaptor
Code: **CRA**

② Group Size & Diameter

Please select the required group size and diameter and add the corresponding Code to position ② of the order code for your clamp assembly.

| Group Size | Outside Diameter | | Code |
|------------|------------------|------|------------|
| | STAUFF | DIN | |
| 1A | 1 | 6 | 106A ACT |
| | | 6,4 | 106,4A ACT |
| | | 9,5 | 109,5A ACT |
| | | 10 | 110A ACT |
| | | 12 | 112A ACT |
| 2 | 2 | 12,7 | 212,7 ACT |
| | | 14 | 214 ACT |
| | | 18 | 218 ACT |
| 3 | 3 | 19 | 319 ACT |
| | | 20 | 320 ACT |
| | | 21,3 | 321,3 ACT |
| | | 25,4 | 325,4 ACT |

Additional outside diameters are available upon request. Please consult STAUFF for further information.

③ Clamp Body Design & Material

Please select the design and material of your clamp body and add the corresponding Code to position ③ of the order code for your clamp assembly.

Type ACT (Anti-Corrosion Technology)

Flame-retardant Polypropylene (PPV0) with integrated rubber strips made of Anti-Corrosion Elastomer (ACE)
Code: **ACT**

④ Mounting & Fitting Combination

Please select the mounting and fitting combination (e.g. bolts, screws, cover plates, etc.) and add the corresponding Code to position ④ of the order code for your clamp assembly.

Installation with Cover Plate and Bolts

Cover Plate DP with Hexagon Head Bolts AS
Code: **DP-AS**

Cover Plate DP with Socket Cap Screws IS
Code: **DP-IS**

Installation with Locking Plate and Bolts

Safety Locking Plate SIG with Stacking Bolts AF
Code: **SIG-AF**

Installation with Bolts only

Socket Cap Screws IS with Washers
Code: **IS**

⑤ Thread Type

Please select the required thread type and add the corresponding Code to position ⑤ of the order code for your clamp assembly.

Metric ISO thread
Code: **M**

Unified coarse (UNC) thread
Code: **U**

All threaded parts are available with metric ISO thread or unified coarse (UNC) thread.

⑥ Material & Surface Finish

Please select the required material and surface finish of the mounting hardware and add the corresponding Code to position ⑥ of the order code for your clamp assembly.

To ensure the full anti-corrosion performance of STAUFF ACT Clamps, it is highly recommended that the mounting hardware is manufactured from stainless steel:

Metal parts made of stainless steel V4A 1.4401 / 1.4571 (AISI 316 / 316 Ti)
Code: **W5**



Alternative materials and surface finishes are available upon request. Consult STAUFF for further information.

⑦ Assembling & Kitting

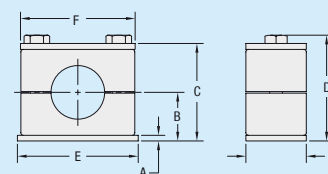
If required, please select an additional assembling and kitting option and add the corresponding Code to the last position of the order code for your clamp assembly.

Components supplied separately
Code: **none** (standard option)

Components assembled
Code: **#A** (special option)

Components packed in kits
Code: **#K** (special option)

Dimensions of Clamp Assemblies



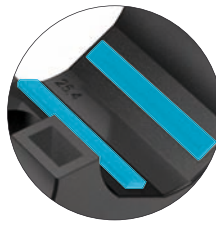
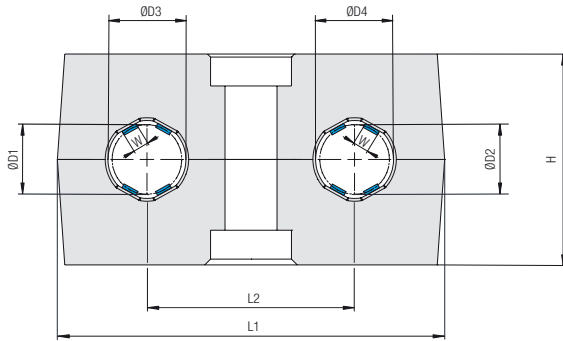
| Group | STF. | DIN | Dimensions (mm/m) | | | | | | |
|-------|------|-----|-------------------|------|------|------|------|------|---|
| | | | A | B | C | D | E | F | G |
| 1A | 1 | 3 | 16 | 32 | 36 | 36 | 34 | 30 | |
| | | .12 | .63 | 1.26 | 1.42 | 1.41 | 1.33 | 1.18 | |
| 2 | 2 | 3 | 19 | 38 | 42 | 42 | 40,5 | 30 | |
| | | .12 | .75 | 1.50 | 1.65 | 1.65 | 1.59 | 1.18 | |
| 3 | 3 | 3 | 20,75 | 41,5 | 45,5 | 50 | 48 | 30 | |
| | | .12 | .82 | 1.64 | 1.80 | 1.96 | 1.88 | 1.18 | |

Weights of Clamp Assemblies

| | STAUFF / DIN Group Size | | |
|-------------------|-------------------------|-------|-------|
| | 1A / 1 | 2 / 2 | 3 / 3 |
| Weight / 100 Pcs. | 8,10 | 9,40 | 11,20 |
| (kg/lbs) | 17.82 | 20.68 | 24.64 |

Dimensions and weights for clamp assemblies including Weld Plate SP, Cover Plate DP and Hexagon Head Bolts AS.

Clamp Bodies - Type ACT


 Integrated Rubber Strips
made of Anti-Corrosion Elastomer


| Group Size | Outside Diameters Ø D1 / Ø D2 (mm) (in) | Ordering Code (2 Clamp Halves) | Dimensions (mm/in) | | | | | | |
|------------|---|-----------------------------------|--------------------|------------|------------|------------|--------------|------------|--|
| | | | ØD3/ØD4 | W | L1 | L2 | H | Width | |
| 1D | 1 | 106/06 ACT (1130029765) | 9 .35 | 1,4 .06 | | | | | |
| | | 106,4/6,4 ACT (1130029766) | 9,4 .37 | 1,5 .06 | | | | | |
| | | 109,5/9,5 ACT (1130029767) | 12,5 .49 | 2,3 .09 | 36 1.42 | 20 .79 | 26 1.02 | 30 1.18 | |
| | | 110/10 ACT (1130029768) | 13 .51 | 2,3 .09 | | | | | |
| | | 112/12 ACT (1130029769) | 15 .59 | 2,8 .11 | | | | | |
| 2D | 2 | 212,7/12,7 ACT (1130029771) | 15,7 .62 | 3,5 .14 | 53 2.09 | 29 1.14 | 32 1.26 | 30 1.18 | |
| | | 214/14 ACT (1130029772) | 17 .67 | 3,5 .14 | | | | | |
| 3D | 3 | 318/18 ACT (1130029747) | 21 .83 | 3,5 .14 | | | | | |
| | | 319/19 ACT (1130029748) | 22 .87 | 3,5 .14 | | | | | |
| | | 320/20 ACT (1130029749) | 23 .91 | 3,5 .14 | 67 2.64 | 36 1.42 | 35,5 1.40 | 30 1.18 | |
| | | 321,3/21,3 ACT (1130029750) | 24,3 .96 | 3,5 .14 | | | | | |
| | | 325,4/25,4 ACT (1130029751) | 28,4 1.12 | 3,5 .14 | | | | | |

Order Codes

Clamp Body

***2*12,7/12,7*ACT**

One clamp body consists of two clamp halves, each with four integrated rubber strips.

- * 1st Part of STAUFF Group 2
- * Exact outside diameters Ø D1 / Ø D2 (mm) 12,7 / 12,7
- * Material code (see below) ACT

Standard packaging unit is 25 clamp bodies per bag.

Material Properties


 Flame-retardant Polypropylene (PPV0) with integrated rubber strips made of Anti-Corrosion Elastomer (ACE)
Material code: **ACT**

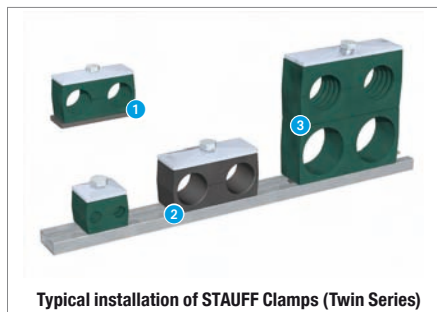
Additional outside diameters and combinations of different outside diameters are available upon request. Please consult STAUFF for further information.

Mounting Hardware

STAUFF is positioned to offer a complete range of mounting hardware meeting the demands of customers for most industrial applications.

Typical installation scenarios include:

- 1 **Installation on weld plates**
Single and group weld plates available
- 2 **Installation on mounting / channel rails**
Adaptors for various rail types available
- 3 **Multi-level (stacking) installation**
Using stacking bolts and safety locking plates



Typical installation of STAUFF Clamps (Twin Series)

To ensure the full anti-corrosion performance of STAUFF ACT Clamps, it is highly recommended to use stainless steel mounting hardware only. STAUFF is in the position to offer all required mounting hardware ex stock in several stainless steel qualities, including:

Stainless Steel V4A

- 1.4401 / 1.4571 (AISI 316 / 316 Ti)
- STAUFF Material Code: W5



Alternative materials and surface finishes are available upon request. Consult STAUFF for further information.

Spacing and Positioning of STAUFF Clamps

In order to conform with the Norwegian offshore standard Norsok Z-010, correct spacing of pipe and tube clamps has to be observed. The following recommendations are made:

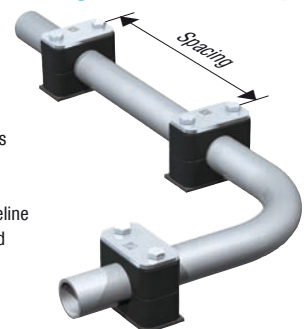
[...] Instrument tubing shall be supported to field trays or cable ladders for tubing sizes less than 16 mm outside diameter. Cable tray, ladder or equal to be used for larger sizes when mechanical protection is required. [...]

Tubing to be fastened to self drained tubing clamps with span max every 60x tubing diameter (in millimeters). Tubing sizes above 25 mm (.98 in) outside diameter shall as a minimum have support every 1500 mm (4.92 ft). [...]

Please also note the following information on the installation of STAUFF Clamps next to pipe bends, fittings and/or valves:

Pipe bends should be supported by STAUFF Clamps positioned as close to the bends as possible.

If fittings and/or valves are incorporated in the pipeline system, it is recommended that support is provided by STAUFF Clamps located directly next to these components to protect them from vibrations.





① Type of Installation

Please select the type of installation (e.g. weld plates, rail nuts, etc.) and add the corresponding Code to position ① of the order code for your clamp assembly.

Without Installation Equipment
Code: **none**

Installation on Weld Plate

Single Weld Plate
Code: **SP**

Group Weld Plate
Code: **RAP**

Installation on Mounting / Channel Rail

Hexagon Rail Nut
Code: **SMG** (Stainless Steel)

Channel Rail Adaptor
Code: **CRA**

② Group Size & Diameter

Please select the required group size and diameters and add the corresponding Code to position ② of the order code for your clamp assembly.

| Group Size | Outside Diameters | | Code | | |
|------------|-------------------|------|------|----------------|---------------|
| | STAUFF | DIN | | (mm) | (in) |
| 1D | 1 | | 6 | 106/06 ACT | |
| | | | 6,4 | 1/4 | 106,4/6,4 ACT |
| | | | 9,5 | 3/8 | 109,5/9,5 ACT |
| | | | 10 | | 110/10 ACT |
| | | 12 | | 112/12 ACT | |
| 2D | 2 | 12,7 | 1/2 | 212,7/12,7 ACT | |
| | | 14 | | 214/14 ACT | |
| 3D | 3 | 18 | | 318/18 ACT | |
| | | 19 | 3/4 | 319/19 ACT | |
| | | 20 | | 320/20 ACT | |
| | | 21,3 | | 321,3/21,3 ACT | |
| | | 25,4 | 1 | 325,4/25,4 ACT | |

Additional outside diameters and combinations of different outside diameters are available upon request. Please consult STAUFF for further information.

③ Clamp Body Design & Material

Please select the design and material of your clamp body and add the corresponding Code to position ③ of the order code for your clamp assembly.

Type ACT (Anti-Corrosion Technology)



Flame-retardant Polypropylene (PPV0) with integrated rubber strips made of Anti-Corrosion Elastomer (ACE)
Code: **ACT**

④ Mounting & Fitting Combination

Please select the mounting and fitting combination (e.g. bolts, cover plates, etc.) and add the corresponding Code to position ④ of the order code for your clamp assembly.

Installation with Cover Plate and Bolt / Screw

Cover Plate GD with
Hexagon Head Bolt AS
Code: **GD-AS**

Cover Plate GD with
Socket Cap Screw IS
Code: **GD-IS**

Installation with Locking Plate and Bolt

Safety Locking Plate SI with
Stacking Bolt AF
Code: **SI-AF**

Safety Locking Plate SIV with
Stacking Bolt AF
Code: **SIV-AF**

⑤ Thread Type

Please select the required thread type and add the corresponding Code to position ⑤ of the order code for your clamp assembly.

Metric ISO thread
Code: **M**

Unified coarse (UNC) thread
Code: **U**

All threaded parts are available with metric ISO thread or unified coarse (UNC) thread.

⑥ Material & Surface Finish

Please select the required material and surface finish of the mounting hardware and add the corresponding Code to position ⑥ of the order code for your clamp assembly.

To ensure the full anti-corrosion performance of STAUFF ACT Clamps, it is highly recommended that the mounting hardware is manufactured from stainless steel:

Metal parts made of stainless steel V4A 1.4401 / 1.4571 (AISI 316 / 316 Ti)
Code: **W5**



Alternative materials and surface finishes are available upon request. Consult STAUFF for further information.

⑦ Assembling & Kitting

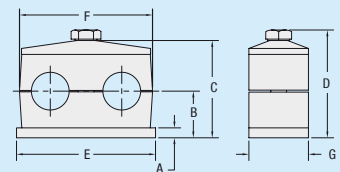
If required, please select an additional assembling and kitting option and add the corresponding Code to the last position of the order code for your clamp assembly.

Components supplied separately
Code: **none** (standard option)

Components assembled
Code: **#A** (special option)

Components packed in kits
Code: **#K** (special option)

Dimensions of Clamp Assemblies



| Group | STF. | DIN | Dimensions (mm/in) | | | | | | |
|-------|------|-----|--------------------|------|------|------|------|------|------|
| | | | A | B | C | D | E | F | G |
| 1D | 1 | | 3 | 16,5 | 37 | 41 | 37 | 36 | 30 |
| | | | .12 | .65 | 1.46 | 1.61 | 1.46 | 1.42 | 1.18 |
| 2D | 2 | | 5 | 18,5 | 39 | 44 | 55 | 53 | 30 |
| | | | .20 | .73 | 1.54 | 1.73 | 2.17 | 2.09 | 1.18 |
| 3D | 3 | | 5 | 23,5 | 49 | 54 | 70 | 67 | 30 |
| | | | .20 | .93 | 1.93 | 2.13 | 2.76 | 2.64 | 1.18 |

Weights of Clamp Assemblies

| | STAUFF / DIN Group Size | | |
|-----------------------|-------------------------|--------|--------|
| | 1D / 1 | 2D / 2 | 3D / 3 |
| Weight / 100 Pcs. | 7,60 | 13,50 | 17,70 |
| (^{kg} /lbs) | 16.72 | 29.70 | 38.94 |

Dimensions and weights for clamp assemblies including Weld Plate SP, Cover Plate GD and Hexagon Head Bolt AS.



Local Solutions For Individual Customers Worldwide



GERMANY

Walter Stauffenberg GmbH & Co. KG
P. O. Box 1745 • 58777 Werdohl
Im Ehrenfeld 4 • 58791 Werdohl
Tel.: +49 23 92 916 0
Fax: +49 23 92 916 160
act@stauff.com

Globally available through wholly-owned branches and distributors in all major oil and gas regions.



act@stauff.com
www.stauff.com/act

AUSTRALIA

STAUFF Corporation Pty. Ltd.
Tel.: +61 2 4271 18 77
sales@stauff.com.au

BRAZIL

STAUFF Brasil Ltda.
Tel.: +55 11 47 72 72 00
stauff@stauffbrasil.com

CANADA

STAUFF Canada Ltd.
Tel.: +1 416 282 46 08
sales@stauffcanada.com

CHINA

STAUFF China
Tel.: +86 21 68 18 70 00
info@stauff.com.cn

FRANCE

STAUFF S.A.S.
Tel.: +33 2 54 50 55 50
direction@stauffsa.com

INDIA

STAUFF India Pvt. Ltd.
Tel.: +91 20 66 20 2471
sales@stauffindia.com

IRELAND

STAUFF Ireland Ltd.
Tel.: +44 28 92 60 69 00
sales@stauffireland.com

ITALY

STAUFF Italia s.r.l.
Tel.: +39 0362 63 80 70
sales@stauff.it

KOREA

STAUFF Korea Ltd.
Tel.: +82 51 266 66 66
info@stauff.co.kr

MALAYSIA

STAUFF South East Asia Sdn Bhd
Tel.: +60 3 8024 61 68
sales@stauff.com.my

NEW ZEALAND

STAUFF Corporation (NZ) Ltd.
Tel.: +64 9 271 48 12
info@stauff.co.nz

POLAND

STAUFF Polska Sp. z o.o.
Tel.: +48 58 660 11 60
sales@stauff.pl

RUSSIAN FEDERATION

STAUFF LLC
Moscow Head Office:
Tel.: +7 495 276 16 50
sales@stauff.ru

St. Petersburg Branch Office:
Tel.: +7 812 676 76 53
s.petersburg@stauff.ru

UNITED KINGDOM

STAUFF UK Ltd.
Sheffield Head Office:
Tel.: +44 114 251 85 18
sales@stauff.co.uk

Aberdeen Branch Office:
Tel.: +44 1224 23 85 18
sales@stauffscotland.co.uk

UNITED STATES

STAUFF Corporation
Tel.: +1 201 444 78 00
sales@stauffusa.com

VIETNAM

STAUFF Vietnam Ltd.
Tel.: +84 8 3995 47 23
sales@stauff.com.vn