

# FERNCO Flexible Couplings Product Guide



## ABOUT US

Leap Civil supplies plumbing and drainage products for residential, commercial and civil infrastructure projects.

Products and solutions from Leap Civil include SuperSleve Vitri-fied Clay Piping, Fernco Flexible Couplings, Advance Maintenance Shafts, Polymer Concrete Piping Systems and a range of drainage and stormwater piping solutions.

## FLEXIBLE COUPLINGS

Fernco provides the most extensive range of Standard Couplings available in the marketplace and has revolutionised traditional pipe repair methods over the years.

Fernco Standard Couplings are specifically designed to connect and repair pipes of different materials or sizes used in sewerage, drainage and other underground applications.



**STANDARD COUPLINGS**

Designed for sewerage, drainage and low pressure applications up to 2.5 bar.



**ADAPTOR COUPLINGS**

Designed for connecting drainage pipes of differing materials and outside diameters.



**BUSHES**

For use with couplings when connecting pipes of significantly different outside diameters.



**LARGE DIAMETER COUPLINGS**

Manufactured to suit any pipe diameter, for sewerage, drainage and low-pressure applications.

# FERNCO STANDARD COUPLINGS



Fernco Standard Couplings are specifically designed to connect pipelines of different materials or sizes used in sewerage, drainage and other underground applications

## 50-620 Diameter

The combination of a durable design and excellent sealing properties enables the Fernco Standard Coupling to provide a reliable seal on rough pipe surfaces e.g. concrete, and a high performance seal on smooth surfaces e.g. PVC.

Standard Couplings can be combined with Fernco Bushes in order to act as an adaptor between pipelines of widely differing outside diameters. A Bush will be required when connecting pipes of different materials or sizes i.e. when outside diameters of the joints exceed 12mm, to maintain invert alignment.

### BENEFITS

- Durable design ensuring a high performance and reliable seal
- Stainless steel shear band provides excellent resistance to heavy loads and shear forces
- Reduces excavation work
- AS/NZS 4327: Type B Approval for work on water authority sewers
- Shear band ensures joint flexibility and pipe alignment
- High performance sealing properties of the couplings eliminates need for grouting in most applications

### APPLICATIONS

When used individually or combined with bushes, Fernco Standard Couplings have many applications in the construction, maintenance and repair of pipe systems:

- As a joint for plain ended pipes
- Connecting short and cut lengths of pipe
- Making post construction connections to an existing pipeline
- Reconnection of laterals on renovated sewers
- Introducing rocker pipe outside manholes or structures
- Repair and maintenance of existing pipelines



Product Code	Size (mm)	Width (mm)	'T' (mm)	Product Code	Size (mm)	Width (mm)	'T' (mm)
SC65	50 - 65	90	6	SC345	320 - 345	190	9
SC75	60 - 75	108	6.5	SC360	335 - 360	190	9
SC95	80 - 95	110	7	SC370	345 - 370	190	9
SC115	100 - 115	120	7	SC385	355 - 385	190	9
SC120	105 - 120	120	7	SC410	385 - 410	190	9
SC125	110 - 125	120	7	SC425	400 - 425	190	9
SC137	120 - 137	120	7	SC430	405 - 430	190	9
SC150	125 - 150	136	7	SC445	420 - 445	190	9
SC165	140 - 165	136	7	SC450	425 - 450	190	9
SC175	150 - 175	136	7	SC465	440 - 465	190	9
SC185	160 - 185	136	7	SC470	445 - 470	190	9
SC200	175 - 200	150	7.5	SC490	465 - 490	190	9
SC215	190 - 215	150	7.5	SC510	485 - 510	190	9
SC225	200 - 225	150	7.5	SC525	500 - 525	190	9
SC250	225 - 250	150	7.5	SC540	515 - 540	190	9
SC265	240 - 265	150	7.5	SC550	525 - 550	190	9
SC275	250 - 275	150	7.5	SC560	535 - 560	190	9
SC290	265 - 290	150	7.5	SC580	555 - 580	190	9
SC305	280 - 305	190	9	SC600	575 - 600	190	9
SC310	285 - 310	190	9	SC620	595 - 620	190	9
SC320	295 - 320	190	9				
SC335	305 - 335	190	9				

# FERNCO ADAPTOR COUPLINGS



Adaptor Couplings provide a solution to many cases of adaptation

## 80-420mm Diameter

The coupling is a stepped moulded elastomeric sleeve that has different diameters at each end. The sleeve is fitted with two stainless steel clamping bands which provide an efficient method of connecting pipes that have varying outside diameters and also eradicates possible bush requirements.

Adaptor Couplings can also be used to connect all traditional and new pipe systems including structural walled plastic pipes.

A special range of Adaptor Couplings which incorporate an extra wide clamping band at one end are available for ribbed pipe systems. The clamping band secures against two or more external ribs on the plastic ribbed pipe systems. The clamping band secures against two or more external ribs on the plastic ribbed pipe thereby ensuring a high performance seal is obtained irrespective of the coupling position or movement.

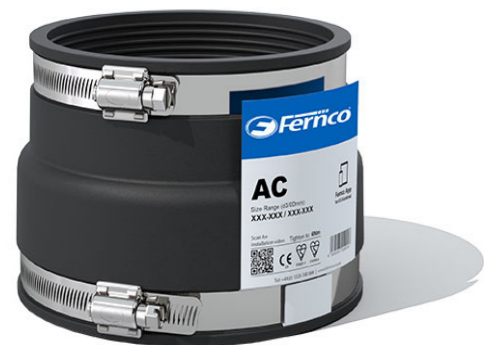
The range can also be supplied with nitrile sleeves.

### BENEFITS

- Provides a quick and efficient method of connecting pipes of differing materials and outside diameters
- Low cost alternative to using Bushes

### APPLICATIONS

- Provide a connection to pipes of different outside diameters
- Can be used to join pipelines that are different materials including vitrified clay, cast iron and metal pipes



Product Code	Size (mm)	Coupler (mm)	Adaptor (mm)
AC1221	50 - 65	110 - 122	80 - 95
AC1361	60 - 75	121 - 136	80 - 95
AC1452	80 - 95	130 - 145	110 - 125
AC1602	100 - 115	144 - 160	110 - 122
AC1603	105 - 120	144 - 160	121 - 136
AC1923	110 - 125	170 - 192	121 - 136
AC1924	120 - 137	170 - 192	144 - 160
AC2100	125 - 150	185 - 210	100 - 115
AC2101	140 - 165	185 - 210	160 - 180
AC2154	150 - 175	190 - 215	150 - 165
AC3204	160 - 185	295 - 320	144 - 160
AC3600	175 - 200	335 - 360	295 - 320
AC3850	190 - 215	360 - 385	300 - 325
AC4000	200 - 225	121 - 136	110 - 121
AC4208	225 - 250	395 - 420	240 - 265
AC5144	240 - 265	110 - 125	100 - 115
AC6000	250 - 275	160 - 180	180 - 200

# FERNCO BUSHES



## 100-3000+ Diameter

Designed to be used with Fernco Standard Couplings, Bushes are available in a range of sizes and thicknesses that allow for the adaptation between all pipe materials and types

They are designed for use when there is a significant difference in the outside diameter (greater than 12mm) of the pipes to be connected or if an Adaptor Coupling is not available.

Fernco Bushes can also be used when a reduction or increase in the pipe size is required by the user.

### BENEFITS

- Can be manufactured to suit specific site and application requirements
- Provide a high performance seal on low pressure pipes
- The use of bushes simplifies an effective and waterproof connection as it equalises the pipe outside diameters to within 5mm

### APPLICATIONS

- Multiple combinations of bushes are available (contact LEAP Civil for more information)
- Bushes can be used with Adaptor Couplings to increase the effective range



Product Code	'T' (mm)	Size (mm)	Product Code	'T' (mm)	Size (mm)
BC08/105	8	105	BC08/428	8	428
BC08/115	8	115	BC12/100	12	100
BC08/125	8	125	BC12/125	12	125
BC08/132	8	132	BC15/115	15	115
BC08/160	8	160	BC16/160	16	160
BC08/166	8	166	BC16/164	16	164
BC08/170	8	170	BC16/170	16	170
BC08/180	8	180	BC16/240	16	240
BC08/187	8	177 - 187	BC16/250	16	250
BC08/192	8	192	BC16/315	16	315
BC08/200	8	200	BC16/346	16	346
BC08/250	8	250	BC16/400	16	400
BC08/265	8	265	BC20/105	20	105
BC08/315	8	315	BC24/315	24	315
BC08/345	8	345	BC24/327	24	327
BC08/357	8	357	BC24/400	24	400
BC08/400	8	400	BC32/400	32	400

## FERNCO LARGE DIAMETER COUPLINGS

## QUALITY ASSURANCE & ACCREDITATIONS

### 600 - 2100mm+ Diameter

Fernco Large Diameter Couplings are designed to connect and repair pipelines of different materials, up to and exceeding 2,000mm outside diameter

The combination of a durable design and excellent sealing properties enables the coupling to provide a reliable seal on rough pipe surfaces e.g. concrete, and a high-performance seal on smooth surfaces e.g. uPVC.

Large Diameter couplings can be combined with Fernco Bushes when a reduction or increase in the pipe size is required by the user. The range can also be supplied with nitrile sleeves.

#### BENEFITS

- Easy to install
- Can be used with all common pipe materials (clay, concrete, iron, asbestos/cement, plastic or fibreglass)

#### APPLICATIONS

- Provide a watertight connection
- Available in any size to meet site requirements
- Unique bolting system on Large Diameter Standard Coupling range



### QUALITY ASSURANCE

Fernco operates a Quality Management System which complies with the requirements of BS EN 9001:2015 (certificate No: FM91289), and an Environmental Management System which complies with the requirements of ISO 14001:2015 (certificate No. EMS 563613).

The scope for each is 'Design, development, manufacture and supply of pipe connection and water management systems. Repairs of pipes, sewers and water infrastructure'.

The manufacturing standards listed below are those applicable to the Fernco range of products.

### CE MARKING

The CE mark is a claim that a construction product can be legally placed on the market of member states of the European Economic Area (EEA) and is based on the principal that the product is fit for purpose.

Fernco use the CE mark on those couplings which meet the requirements of the harmonised standard BS EN 295.

A Declaration of Performance is available which states the products listed are in conformity with the provisions of the Construction Products Regulation when installed in accordance with the installation instructions contained in the product documentation.

### AS/NZS 4327 - Metal-banded flexible couplings for low pressure applications

- Applicable Market: Australia and New Zealand
- These products are manufactured under Watermark licence No: WMKT22225
- Products Covered: Coupling and bushes supplied with grade 1.4401 stainless steel bands
- Sizes Covered: Nominal sizes up to 600mm
- Relevant Fernco products are:
  - Adaptor Couplings - AC633A - AC4209A
  - Type 2B (Shear Banded Couplings) - SC65 - SC620
  - Type 2B Extra Wide Couplings - SC225WA - SC600WA
  - Bushes - Bushes with nominal sizes up to 600mm

IAPMO R&T OCEANA



**WaterMark**  
AS/NZS 4327

Licence No: WMKT22225

TYPE B

**NOTE:** Standard, extra wide and wraparound couplings over 1000mm are manufactured to the same quality assurance and material standards as certified couplings.

# TECHNICAL INFORMATION

FERNCO COUPLINGS ARE THE ONLY TYPE B PIPE COUPLING THAT HAS WATERMARK CERTIFICATION WMKT22225 TO AS/NZS 4327:1995 - SHEAR BANDED FLEXIBLE COUPLINGS FOR LOW-PRESSURE APPLICATIONS

## Clamps and Bolts

In order for a coupling to perform satisfactorily, to resist internal and external hydrostatic pressure as well as root intrusion it is necessary to provide a minimum contact pressure between the coupling and pipe. The pressure applied by the clamp is a function of the tension in the clamp band, the width of the clamp and diameter of the pipe. The tension is created by torque applied to the tightening mechanism and again the torque required to provide a minimum band tension is a function of length of band between tightening mechanisms, friction between the band and the elastomer and the efficiency of the tightening mechanism.

Three types of clamps are used depending upon the size of the coupling. Two are worm drive clamps and one is a unique design of bolted clamp. The worm drives use perforated bands as this design is self-clearing if the clamp is coated in mud or sand whereas non-perforated designs tend to seize. In addition, all elastomeric sleeves are coated in silicon to reduce the friction between the clamp and the sleeve.

## Standard and Extra Wide Couplings up to 620mm

These use heavy duty 'Hi-Torque' worm drive clamps irrespective of the assembly torque required. For diameters over 200mm all clamps incorporate double worm drives. This is due to the nature of their application on authority sewers, to improve their tolerance range and reliability of seal.

These use a unique bolting clamp system to optimise the sealing qualities of the coupling and for ease of tightening on site. This design sets the bolt at the perfect angle to the tangent of the coupling and optimises the conversion of torque applied to tension in the clamping bands and hence, maximises the sealing pressure for a given torque. To reduce friction within the bolting mechanism and to stop the tendency for the stainless steel components to seize the bolt is coated with a metal based lubricant.

## Materials

**Elastomers** - The elastomeric sleeves of the standard, drain, adaptor and extra wide couplings are made from synthetic elastomers. Normally either Ethylene Propylene Diene Monomer (EPDM) or Styrene Butadiene (SBR) rubber is used.

Fernco choose EPDM due to the excellent resistance to sewage and drainage effluents, as well as being inherently resistant to ozone.

**Standard Couplings over 620mm** - The elastomeric body or sleeve is made from dual hardness strip manufactured using the latest moulding technology. The EPDM strip has the main section in 60 IRHD elastomer for long term performance and stability, and the raised sections under the clamping bands in 40 IRHD elastomer for effective sealing performance on all but the roughest pipe surface.

## Stainless Steel Clamping bands, shear rings and components

Fernco supply couplings with high corrosion resistance stainless steel grade 1.4401 (316) austenitic stainless steel to BS EN10088-2: 1995. This grade contains a minimum of 2% molybdenum and is particularly suited for use in soils or groundwater containing chlorides such as marine environments. Also complies with the requirements of AS 1449, for grade 1.4401 (316).

## Performance

**Pressure Testing** - When correctly installed, Fernco's range of couplings will withstand the following pressures.

- **Standard Couplings and Bushes** - up to 620mm - 2.5 bar (36.25 psi)
- **Large Diameter Couplings** - 600mm - 999mm - 1.5 bar (21.75 psi)  
1000mm - 1300mm - 1.0 bar (14.5 psi)
- **Adaptor Couplings** - All sizes 0.6 bar (8.5 psi)

**Site Testing Specifications** - The Standard, Extra Wide and Adaptor Couplings will withstand the air and water tests specified in WSAA Code of Practice

**Durability** - The couplings, when correctly installed, have a design life of 100 years. They are normally suitable for use above and below ground without additional protection due to the high quality of materials used in their construction.

**Angular Deflection** - The couplings, when correctly installed may deflect up to be 2 degrees for Standard Couplers and 3 degrees for Extra Wide Couplers if deflection occurs after installation (due to ground settlement).

FOR MORE INFORMATION CONTACT:

# 1800 666 952



[www.leapcivil.com.au](http://www.leapcivil.com.au)

**VICTORIA BRANCH**  
95b Cheltenham Road  
Dandenong, VIC 3175

t: 03 9791 2462  
m: 040 334 4006  
e: [brendan@leapcivil.com.au](mailto:brendan@leapcivil.com.au)

**NSW BRANCH**  
11 York Road  
Ingleburn, NSW 2565

t: 02 9605 7244  
m: 042 572 6531  
e: [nathan.h@leapcivil.com.au](mailto:nathan.h@leapcivil.com.au)

**QLD BRANCH**  
9 Aldinga Street  
Brendale, QLD 4500

t: 07 3205 6504  
m: 040 334 4008  
e: [paul.d@leapcivil.com.au](mailto:paul.d@leapcivil.com.au)