

GRANOR AUSFLEX® AC-AR STRIPSEAL



1991

GRANOR develop AUSFLEX 'AC' STRIPSEAL. With M16 fixings and robust aluminium section this joint outperformed other systems on the market which used M12 fixings.

1993

GRANOR develop AUSFLEX "AC-AR" STRIPSEAL to meet Austroads BDC92 and stringent NSW RTA design requirements. "AC-AR" uses M20 fixings and has an even more heavy duty section than the original series "AC".

2008

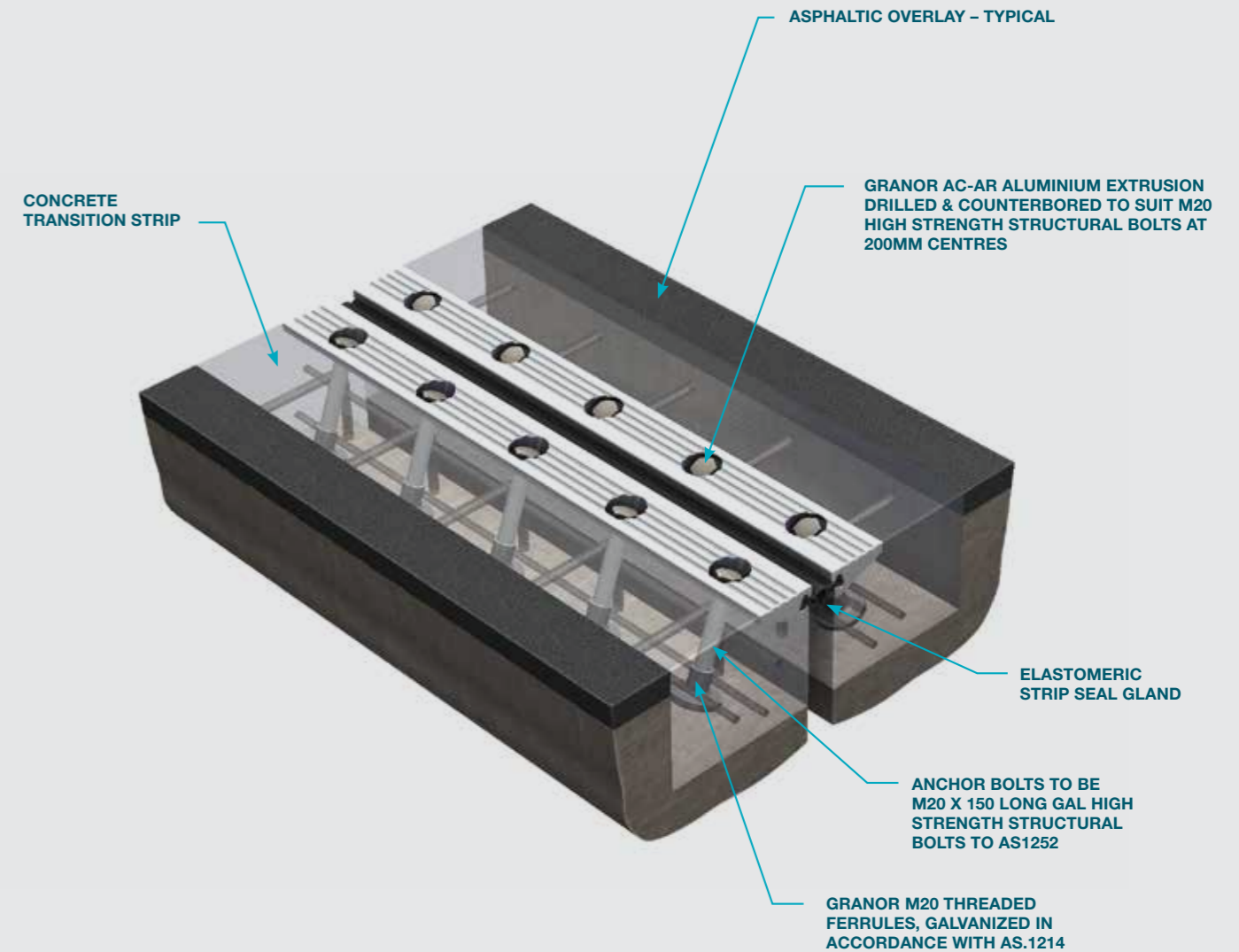
RTA conducts field inspections of bridge expansion joints covering all regions of New South Wales (ref BTD2008/10). Strip seals (of which "AC-AR" is the prime example) are identified as "having the smallest proportion of poor or failed joints" with "the sample size being relatively large".

PRESENT

GRANOR AUSFLEX "AC-AR" STRIPSEAL is now the most common expansion joint type specified for new bridges in Australia. It offers a conservative design with long term proven performance including use on most major highways. Tens of thousands of metres of 'AC-AR' has been supplied throughout Australia since the early 1990's.

STRUCTURAL MARINE GRADE ALUMINIUM SEAL RETAINERS

The GRANOR® AUSFLEX® AC-AR Expansion Joint System is manufactured in Australia by Granor. It utilises a proven design of a structural marine grade aluminium seal retainers, a tensioned bolt cast-in fixing system, and the option of two styles of heavy duty elastomeric glands capable of movements of up to 125mm.



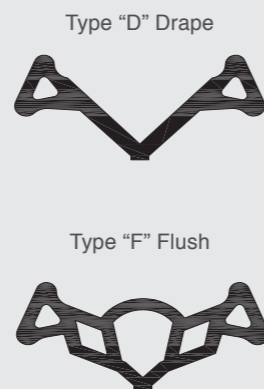
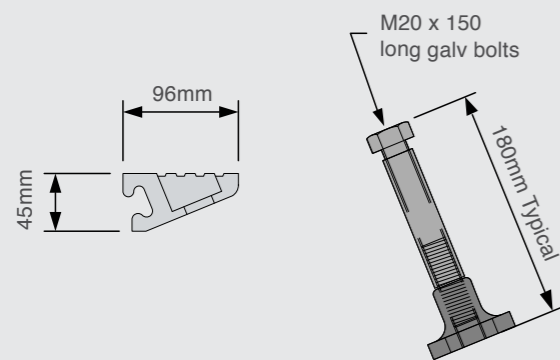
DESIGN FEATURES

HEAVY DUTY, USER FRIENDLY INSTALLATION

- > Heavy duty conservative design.
- > Water tight jointing system.
- > Movement capacity up to 125mm.
 - Seal Retainers are extruded from structural marine grade aluminium.
- > Ease of installation thanks to Granor proprietary installation kit.
- > Two styles of Elastomeric Gland (Flush or Drape).
- > Flush Profile gland limits build up of debris in joint.
- > Gland can accommodate vertical misalignment and some racking movement due to skew angle.
- > Galvanised M20 P.C. 8.8 high tensile fixings are used.
- > Deck or Footpath profiles can be fabricated to match kerb or parapet upturn sections.
- > Smooth ride quality due to flush finish with trafficked surface.

OPTIONAL FEATURES

- > Footpath cover plates can be provided if required
- > Low profile "tang" type anchors are available for pedestrian areas with shallow depth service conduits.
- > Knurled treatment available for aluminium retainers – improved skid resistance for joints on severe skew.



SYSTEM COMPONENTS

SEAL RETAINERS

The GRANOR® AUSFLEX® AC-AR Expansion Joint System seal retainers are extruded from heavy duty structural marine grade aluminium. The alloy yield strength is similar to mild steel and the impact energy required to yield the retainers is far higher than that for mild steel of equivalent size.

HIGH TENSILE FIXINGS

A tensioned anchor system using M20 P.C. 8.8. galvanised H.S.S. bolts to AS-1252, into a specially machined and sealed female threaded ferrule, permits torquing per AS5100, typically by "snug" plus ½ a turn.

This retention system permits lifting and resetting of joint if required due to bridge deck rehabilitation. For compliance with AS5100.4 standard M20 fixings at 200mm centres are required.

ELASTOMERIC GLAND

There are two configurations covering different movement ranges of the central elastomeric gland with movements up to 125mm. Both systems use the same time proven male / female interlocking earlobe system of retention.

TYPE "D" (DRAPE)

The Drape seal is a single membrane type design which utilises a thicker elastomeric section and is preferred by some authorities. If used in footpath areas an aluminium cover plate is recommended.

TYPE "F" (FLUSH)

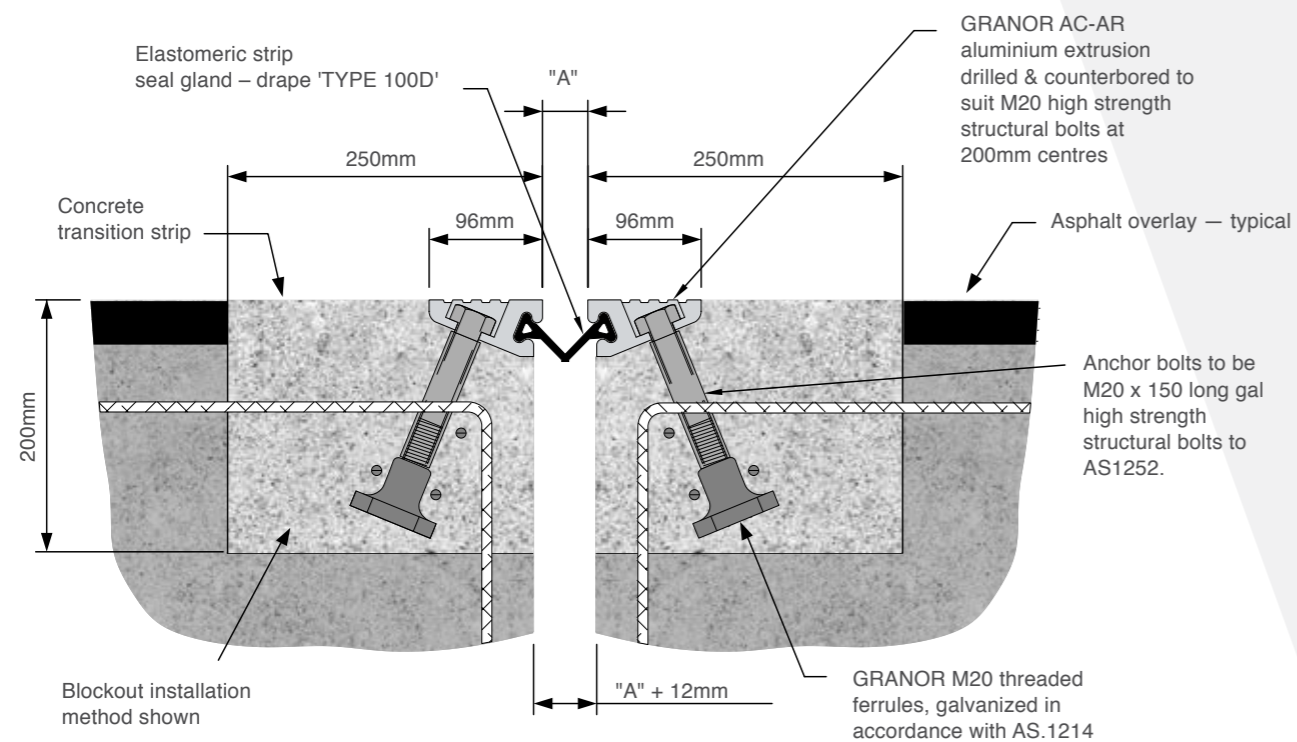
The Flush multi membrane type seal is designed to exclude build up and hence limit compaction of road debris in the joint opening. This multi membrane configuration also enhances long term watertightness. If used in footpath areas an aluminium cover plate is recommended.

ELASTOMERIC GLAND SPECIFICATIONS

PROPERTY	REQUIREMENT	TEST METHOD
Tensile Strength, MPa	13.8 min	AS 1683.11
Elongation at break, %	250 min	AS 1683.11
Hardness (IRHD)	59 +/- 5	AS 1683.15.2
Compression Set (72hrs/100°C),%	40 max	AS 1683.13
"Immersion in IRM 903, (72hrs/100°C) Change in Volume, %"	70 max	AS 1683.23
"Ozone Resistance (100pphm/100hrs/20% strain/40°C)"	No Cracks	AS 1683.24
"Low Temperature Stiffening (7day/-10°C) Change in Hardness, IRHD"	0 ~ 15	AS 1683.15.1
Low Temperature Brittleness Test	Non Brittle @ -30°C	ASTM D 746 (B)
PROPERTIES AFTER ACCELERATED AGING IN AIR AT (72HRS / 100°C)		AS 1683.26
Change in Tensile Strength, %	-20 ~ 0	AS 1683.11
Change in Elongation at break, %	-20 ~ 0	AS 1683.11
Change in Hardness, IRHD	10	AS 1683.15.2

INSTALLATION

GRANOR AUSFLEX AC-AR ALUMINIUM STRIP SEAL EXPANSION JOINT SYSTEM



INSTALLATION GUIDE

A comprehensive Installation Guide is supplied with every order. So that designers may fully understand the installation process this guide can also be emailed on request (please contact Granor).

INSTALLATION KIT

An Installation Kit can be supplied to cover several alternative standard concepts of installation techniques. In order to optimise installation procedure consultation with Granor is recommended at time of order.

INSTALLATION GAP WIDTH

Installation gap width shown is the optimum between ease of installation, and thereafter both short term and long term expansion and contraction of the deck. Gap width "A" specified should not be less than the values listed, but wider installation gap widths can be used.

SPECIFICATIONS

Part No.	Movement Range ("A") min. to max. (mm)	Min Installation Gap Width "A" (mm)	M20 Bolt Spacing	Seal Type	Seal Profile
AC-AR-100D	0 – 100	38	200mm	100D	Type "D" – Drape
AC-AR-125D	0 – 125	38	200mm	125D	
AC-AR-100F	20 – 125	40	200mm	100F	Type "F" – Flush

Notes:

- > AS5100.4 limits the maximum perpendicular gap width across stripseal joints to 85mm. However as noted the Granor seals can safely perform beyond this 85mm limit if required.
- > All seal types permit up to +/-30mm vertical deflection for short term jacking operations (such as bearing replacement).
- > All seal types have a +/-40mm maximum racking capacity for movement vector component in line with the seals (may be critical for joints on severe skew).
- > Historic seal designations 65D, 75D, 65F, 75F, 125F, are superseded. Please contact Granor if you need advice on the most suitable substitute.



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