

GRANOR® SLIPJOINT

STANDARD DUTY SLIPJOINT
“SERIES SJJ”

HEAVY DUTY SLIPJOINT
“SERIES HDSJ”

Over more than 40 years GRANOR® has supplied nearly 1,000,000 lineal metres of Slipjoint to projects throughout Australasia, South-East Asia, the Far East, and Middle East. The current SJJ Series Slipjoint is the result of continuous development from the original Series "CC" introduced in 1972.

In the late 1990's Granor extended the range with the introduction of Heavy Duty Slip Joint – capable of very high load capacities.

Both products comprise a stainless steel sheet sliding over greased PTFE faced elastomeric bearing strip and void-former polystyrene as part of the complete sealed module assemblies.

STRUCTURAL BEARINGS

**STANDARD DUTY SLIPJOINT
"SERIES SJJ"**

**HEAVY DUTY SLIPJOINT
"SERIES HDSJ"**

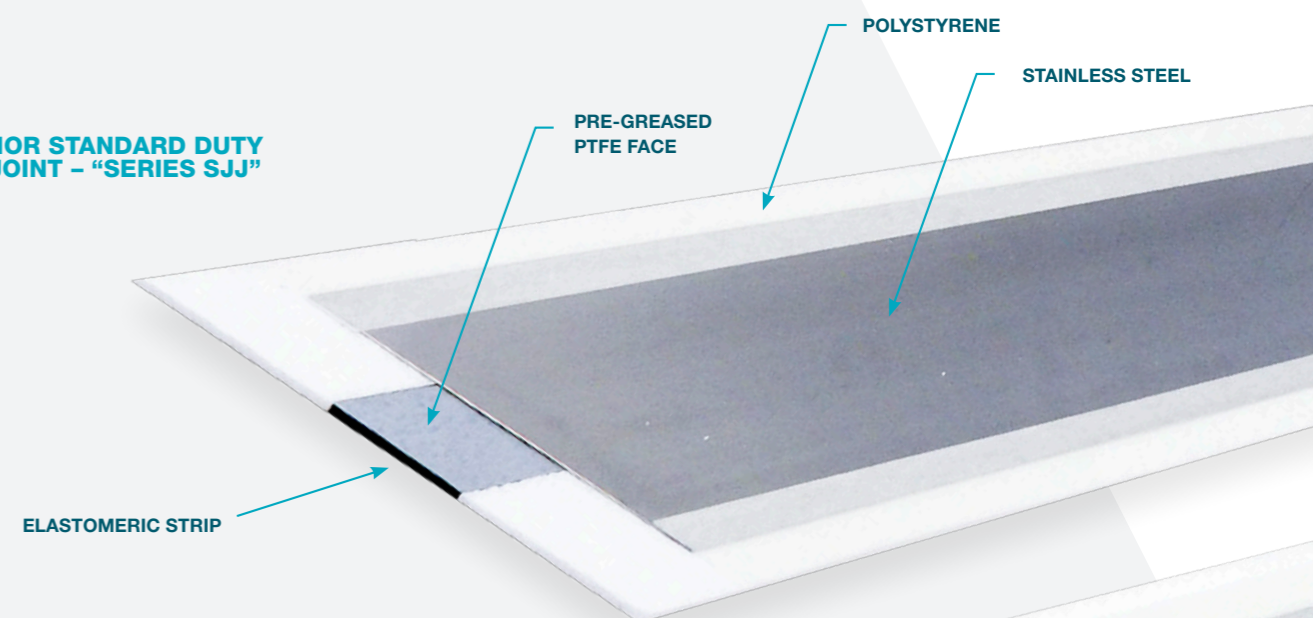
APPLICATIONS

- > Corbel / Slab and Half Joint interfaces where a low friction sliding support is required.
- > More commonly used with poured slabs but can also be used with precast units.
- > Slip interface over masonry block walls.
- > Shopping Centres.
- > Multilevel Buildings
- > Hospitals and other large structures.
- > Wharf and Dam Structures

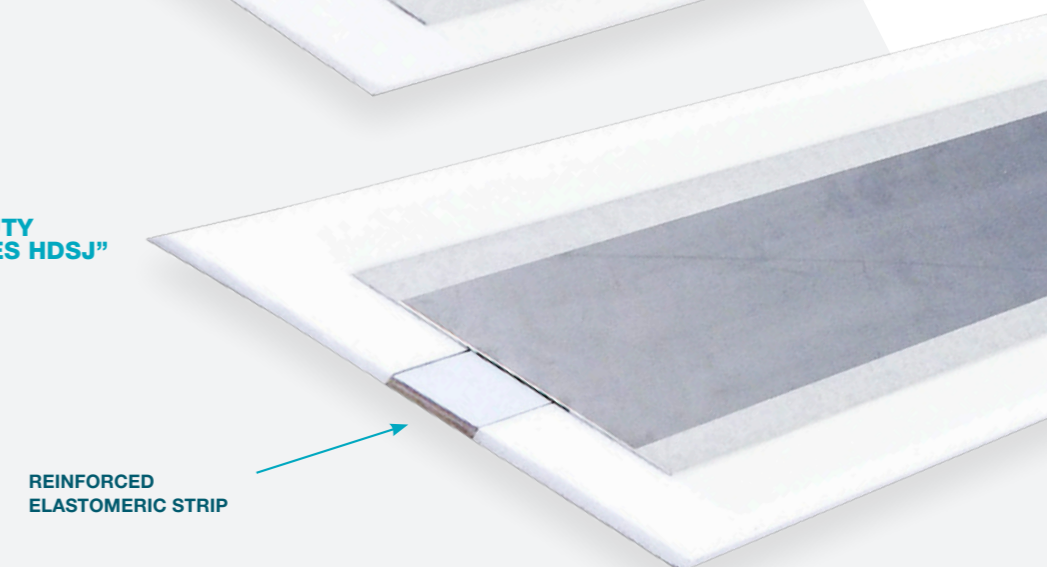
**100 YEAR
DESIGN LIFE**

ZERO MAINTENANCE

**GRANOR STANDARD DUTY
SLIPJOINT - "SERIES SJJ"**



**GRANOR HEAVY DUTY
SLIPJOINT - "SERIES HDSJ"**



DESIGN FEATURES

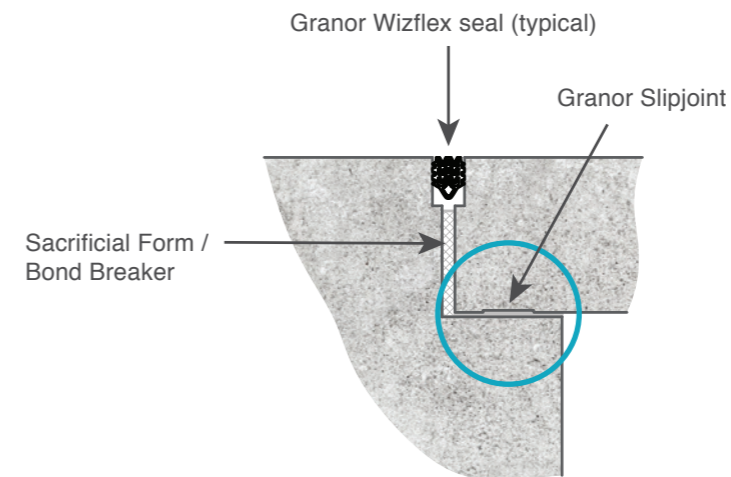
- > Provides a Line Load sliding support (akin to a 'pin roller' idealised support).
- > Predicable low co-efficient of friction – ideal for post tensioning applications.
- > Centralised Load Transfer – eliminates localised fretting and spalling at corbel edge.
- > Rotation Capacity – accommodates structural rotation / deflection providing low moment transfer.
- > Noiseless – eliminates creaking or cracking sounds from sudden slippage at rough concrete on concrete interfaces.
- > Vibration reduction – the elastomeric strip assists with reducing inter-slab vibration transfer.
- > Marking / Labelling – part numbers and intended location (when nominated) are clearly labelled on each module.
- > Standard module lengths – 1 metre for SJJ and 1.2 metre for HDSJ.
- > Simple installation – modules are simply placed end-to-end on flat level wood float finish concrete corbel / seating with the stainless side facing up.
- > Extremely durable – 100 year design life with zero maintenance.
- > Two capacity ranges available: Standard Slipjoint SJJ for working loads up to 500kN/m, and Heavy Duty Slipjoint HDSJ for working loads up to 2500kN/m.

OPTIONAL FEATURES

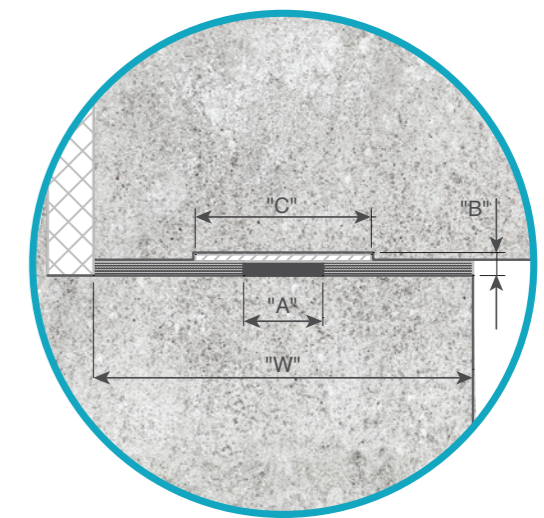
- > Special 'SJJ-FR' and 'HDSJ-FR' versions are available which incorporate fire felt to improve Fire Rating.
- > Offset Designs – where corbel seating space is limited slipjoint can be supplied with stainless position offset to the elastomer strip (thus providing for what is typically greater shortening movement due to shrinkage and thermal contraction, than expansion movement due to thermal expansion only). Example: SJJ-100-30/200-OS20 = a standard SJJ-100-30/200 but with movement preset 20mm one way, thus provided +50 / -10mm of movement capacity.
- > Non-standard lengths – it is not recommended to cut slipjoint modules on site. Where design requirements make it necessary Granor® can manufacture modules of the exact custom length required.
- > Extra Movement Capacity – simply adjust the slipjoint part number accordingly or contact Granor for technical assistance. SJJ and HDSJ can be supplied with very large movement capacities such as required in Seismic applications.

SEATING OPTIONS

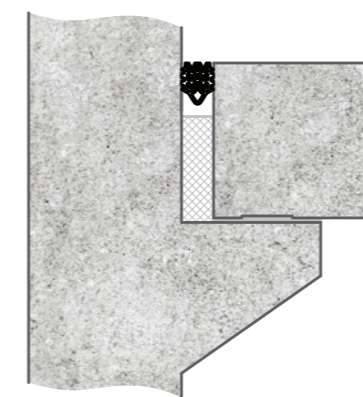
STANDARD CORBEL



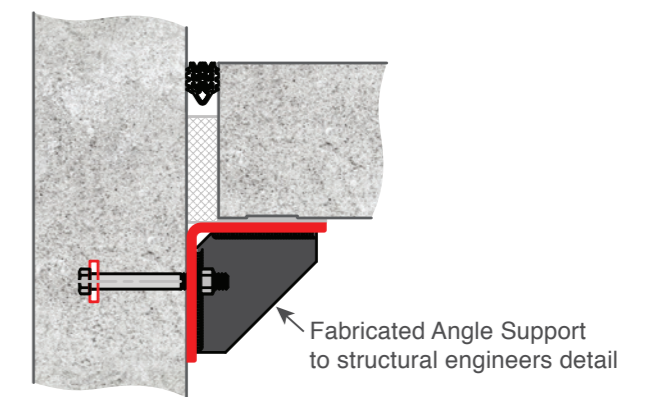
DETAIL



SLAB TO WALL



STEEL ANGLE SUPPORT



SPECIFICATIONS

Part Number	Load Capacity (SLS) (kN/m)	Dimensions (mm)			Rotation Capacity (Radians)	Movement Capacity (+/- mm)	Min Req'd Seating Width "W" (mm)
		A	B	C			
STANDARD SLIPJOINT "SJJ"							
SJJ-75-15/100	75	30	7	60	0.064	15	100
SJJ-75-30/130				90			130
SJJ-75-50/170				130			170
SJJ-100-15/105	100	35	7	65	0.054	15	105
SJJ-100-30/135				95			135
SJJ-100-50/175				135			175
SJJ-150-15/110	150	40	7	70	0.048	15	110
SJJ-150-30/140				100			140
SJJ-150-50/180				140			180
SJJ-200-15/115	200	45	7	75	0.042	15	115
SJJ-200-30/145				105			145
SJJ-200-50/185				145			185
SJJ-250-15/120	250	50	7	80	0.038	15	120
SJJ-250-30/150				110			150
SJJ-250-50/190				150			190
SJJ-300-15/130	300	60	7	90	0.027	15	130
SJJ-300-30/160				120			160
SJJ-300-50/200				160			200
SJJ-400-15/150	400	80	7	110	0.016	15	150
SJJ-400-30/180				140			180
SJJ-400-50/220				180			220
SJJ-500-15/170	500	100	7	130	0.010	15	170
SJJ-500-30/200				160			200
SJJ-500-50/240				200			240
STANDARD SLIPJOINT "SJJ" WITH FIRE RATED FELT							
SJJ-FR-75-50/170	75	30	7	130	0.064	50	170
SJJ-FR-100-50/175	100	35	7	135	0.054	50	175
SJJ-FR-150-50/180	150	40	7	140	0.048	50	180
SJJ-FR-200-50/185	200	45	7	145	0.042	50	185
SJJ-FR-250-50/190	250	50	7	150	0.038	50	190
SJJ-FR-300-50/200	300	60	7	160	0.027	50	200
SJJ-FR-400-50/220	400	80	7	180	0.016	50	220
SJJ-FR-500-50/240	500	100	7	200	0.010	50	240

RECOMMENDED MINIMUM WIDTH OF SLIPJOINT

The product table shows a suggested minimum practical seating width applicable to each size of Slipjoint.

The designer must ensure that if such narrow Slipjoint is used, that load transfer between the slab/corbel or slab/beam, is adequately addressed. Load transfer must be within the reinforcement frame.

The last number (after the forward slash) in the part number can be increased as necessary to match the Corbel / Seating Width required by the project.

Part Number Example: SJJ-150-50/250. 150kN/m load capacity (SLS), +/-50mm movement capacity, 250mm seating width.

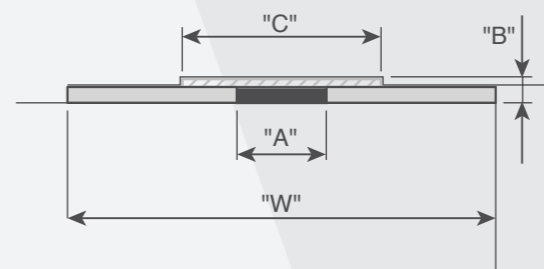
GRANOR SLIPJOINT FIRE RATING

Granor 'SJJ-FR' and 'HDSJ-FR' slipjoint incorporate twin strips of Firemaster / Superwool Trip T fire felt from Morgan Thermal Ceramics. When exposed to heat this material expands to up to three times its thickness assisting with improving design fire ratings by acting as a thermal seal. Designers should note that adjacent structural details such as deck slab thicknesses, PP fibre additives, and intumescent coatings may all be critical in achieving overall necessary fire rating periods.

For critical applications you should contact a Fire Engineering consultant for expert design advice. Contact details for ARUP Fire Services are provided below.

ARUP Fire Services
t: +61 (0) 3 9668 5500
e: fire@arup.com

Part Number	Load Capacity (SLS) (kN/m)	Dimensions (mm)			Rotation Capacity (Radians)	Movement Capacity (+/- mm)	Min Req'd Seating Width "W" (mm)
		A	B	C			
HEAVY DUTY SLIPJOINT "HDSJ"							
HDSJ-600-25/140	600	40	12	100	0.010	25	140
HDSJ-600-50/190				150			190
HDSJ-600-100/290				250			290
HDSJ-750-25/165	750	65	12	125	0.010	25	165
HDSJ-750-50/215				175			215
HDSJ-750-100/315				275			315
HDSJ-1000-25/160	1000	60	19	120	0.010	25	160
HDSJ-1000-50/210				170			210
HDSJ-1000-100/310				270			310
HDSJ-1250-25/180	1250	80	19	140	0.010	25	180
HDSJ-1250-50/230				190			230
HDSJ-1250-100/330				290			330
HDSJ-1500-25/210	1500	110	19	170	0.010	25	210
HDSJ-1500-50/260				220			260
HDSJ-1500-100/360				320			360
HDSJ-1750-25/210	1750	110	25	170	0.010	25	210
HDSJ-1750-50/260				220			260
HDSJ-1750-100/360				320			360
HDSJ-2000-25/235	2000	135	25	195	0.010	25	235
HDSJ-2000-50/285				245			285
HDSJ-2000-100/385				345			385
HDSJ-2500-25/260	2500	160	31	220	0.010	25	260
HDSJ-2500-50/310				270			310
HDSJ-2500-75/410				370			410
HEAVY DUTY SLIPJOINT "HDSJ" WITH FIRE RATED FELT							
HDSJ-FR-600-50/190	600	40	12	150	0.010	50	190
HDSJ-FR-600-100/290				250			290
HDSJ-FR-750-50/215				750			65
HDSJ-FR-750-100/315	275	315					
HDSJ-FR-1000-50/210	1000	60	19		170	0.010	
HDSJ-FR-1000-100/310				270	310		
HDSJ-FR-1250-50/230				1250	80		19
HDSJ-FR-1250-100/330	290	330					
HDSJ-FR-1500-50/260	1500	110	19			220	
HDSJ-FR-1500-100/360				320	360		
HDSJ-FR-1750-50/260				1750	110	25	220
HDSJ-FR-1750-100/360	320	360					
HDSJ-FR-2000-50/285	2000	135	25				245
HDSJ-FR-2000-100/385				345	385		
HDSJ-FR-2500-50/310				2500	160	31	270
HDSJ-FR-2500-100/410	370	410					



SLIPJOINT DIMENSIONS REFERENCE DETAIL



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