1. APPLICATION

HERCULES MODEFIED TYPE D, HLMD have been developed to fulfill the need for a simple, low friction, highly stressed bearing on corbels and columns where a continuous slip joint is inappropriate. They can be used under cast-in-situ and post-tensioned slabs and beams.

2. MATERIAL

HERCULES MODEFIED TYPE D bearings consist of a stainless steel top plate roughened on the upper surface and polished on the lower. The plate slides against a Poly Tetra Fluoro Ethylene (PTFE) coated reinforced rubber pad.

3. DESIGN LIMITATIONS

The following design limitations are recommended:

3.1 Coefficient of friction 0.05

3.2 Expansion capacity Standard bearings up to ± 20mm. Seismic bearings up to ±50mm (all round) Non - standard bearings can be made to accommodate larger expansions

3.3 Maximum contact stress 10 MPa

3.4 Maximum rotation Standard bearings up to 0.021 radians

3.5 Maximum temperature 80ºC

4. SIZES AVAILABLE

Table 5.1 and 5.2 lists a range of standard sizes available for normal and seismic movements. Top plates have been designed to accommodate the designed expansion at Principal Direction of Slide for normal condition and all round for seismic bearings.

Please contact our Technical Department if these sizes do not suit your requirements.

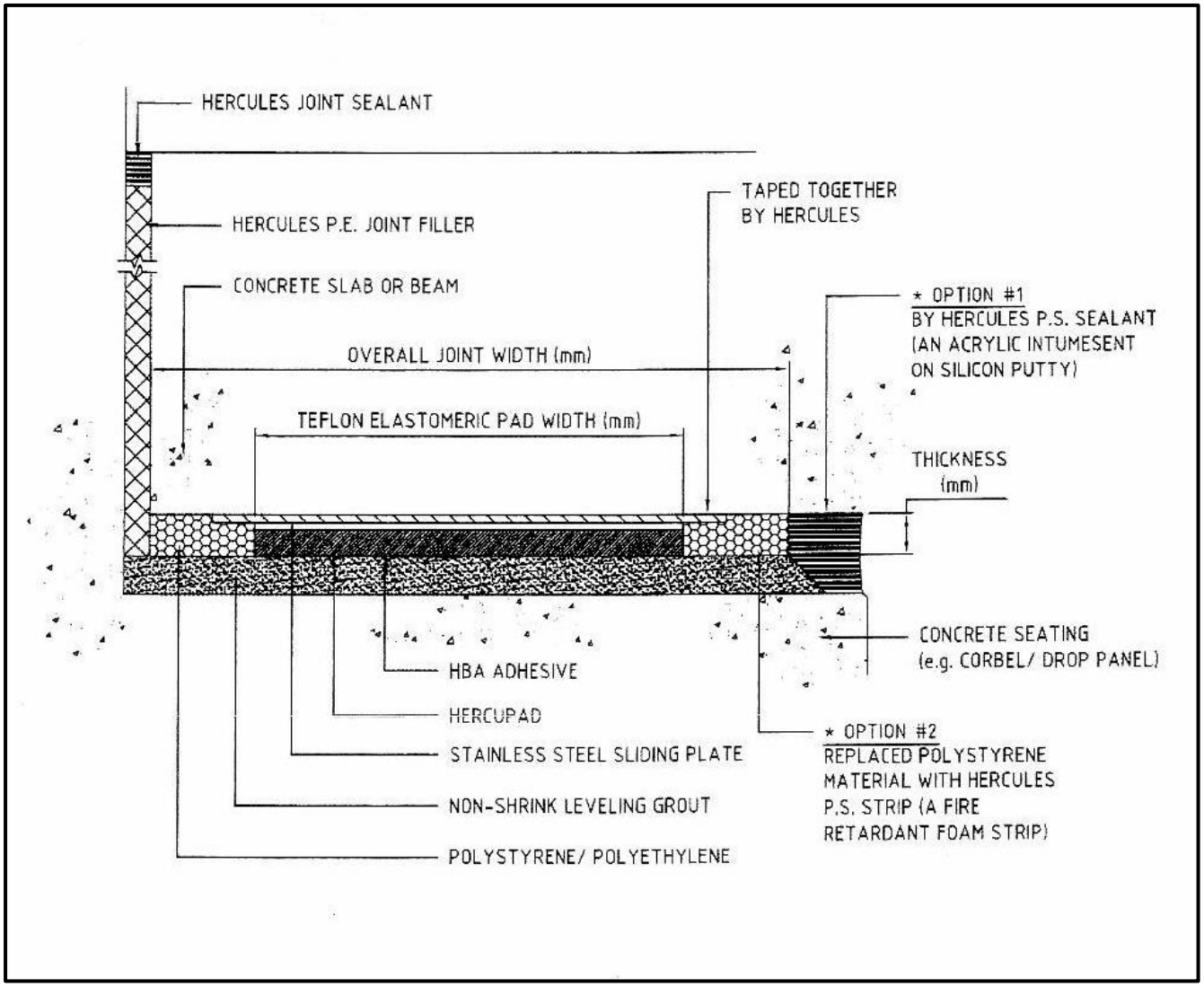
5. INSTALLATION METHOD STATEMENT (IN CONCRETE STRUCTURES)

5.1 The diagram on page 5 - 2 shows HLMD Bearing being cast into an in-situ roof slab. Before leaving the factory the bearing pad is blocked in with polystyrene strips and the whole bearing assembly is sealed with paper tape. This tape excludes dirt and dust from the PTFE face and should not be removed.

5.2 Prepare concrete seating with a 10 mm thick mortar pad with a wood float finish so that the level does not vary more than 2 mm from a straight edge placed in any direction across the seating. The horizontal plane of the seating should vary no more than 3 mm from the elevations shown on the plans.

5.3 Place the bearing in the position shown on the plans and cut any strips of expanded polystyrene required for blocking out around the bearing. Remove the bearing and the loose styrene strips and brush off any dust or grit. Apply Hercules Adhesive Type HBA and bond into position. In some cases it may be better to use Hercules Epoxy Grout, especially if the seating is rough.

5.4 Cover the joints between the bearing and styrene strips with polythene sheet or masking tape to prevent ingress of concrete during pouring. Pour concrete directly onto the roughened top surface of the stainless steel top plate.



HERCULES MODIFIED TYPE D BEARING DETAIL

*FIRE PROTECTION DESIGN OPTIONS

TABLE 5.1 - HERCULES MODIFIED TYPE D STANDARD BEARINGS RANGE

Part Number	Maximum Vertical Working Load (kN)	Top plate (mm) for ±20 mm Expansion	Pad (mm) for 0.021 rads Rotation	Overall Dimensions (mm) Nominal	Bearing Weight (kg)
HLMD/100	100	120×150×1.5	75×135×16	120×150×19	0.4
HLMD/150	150	145×165×1.5	100×150×16	145×165×19	0.6
HLMD/200	200	170×175×1.5	125×160×20	170×175×23	0.8
HLMD/250	250	180×205×1.5	135×190×25	180×205×28	1.2
HLMD/300	300	185×230×1.5	140×215×25	185×230×28	1.4
HLMD/325	325	195×250×1.5	150×235×30	195×250×33	1.8
HLMD/400	400	205×265×1.5	160×250×30	205×265×33	2.1
HLMD/450	450	215×285×1.5	170×270×35	215×285×38	2.6
HLMD/500	500	220×305×1.5	175×290×35	220×305×38	2.9
HLMD/550	550	235×310×1.5	190×295×35	235×310×38	3.2
HLMD/600	600	250×315×1.5	205×300×40	250×315×43	3.8

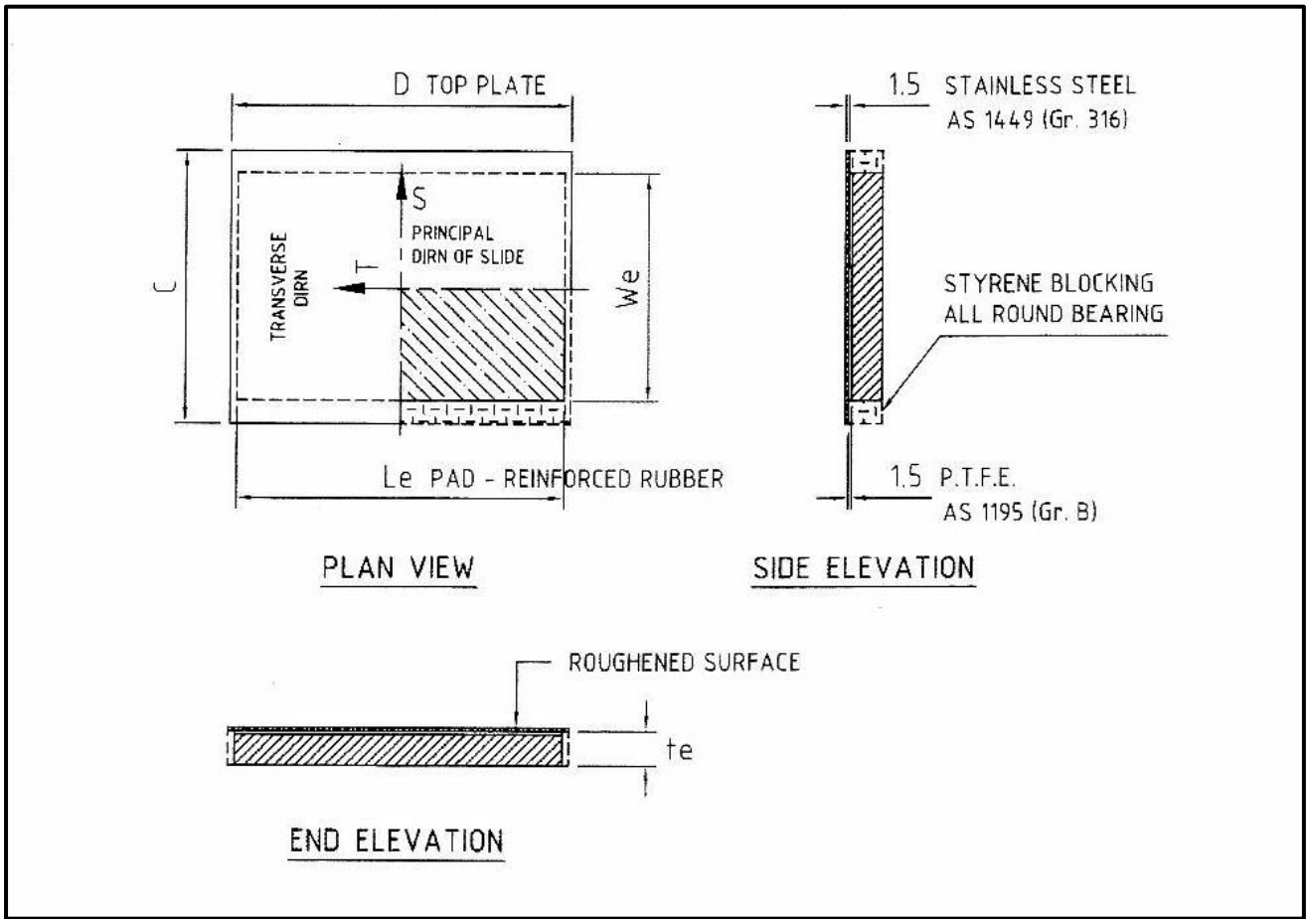
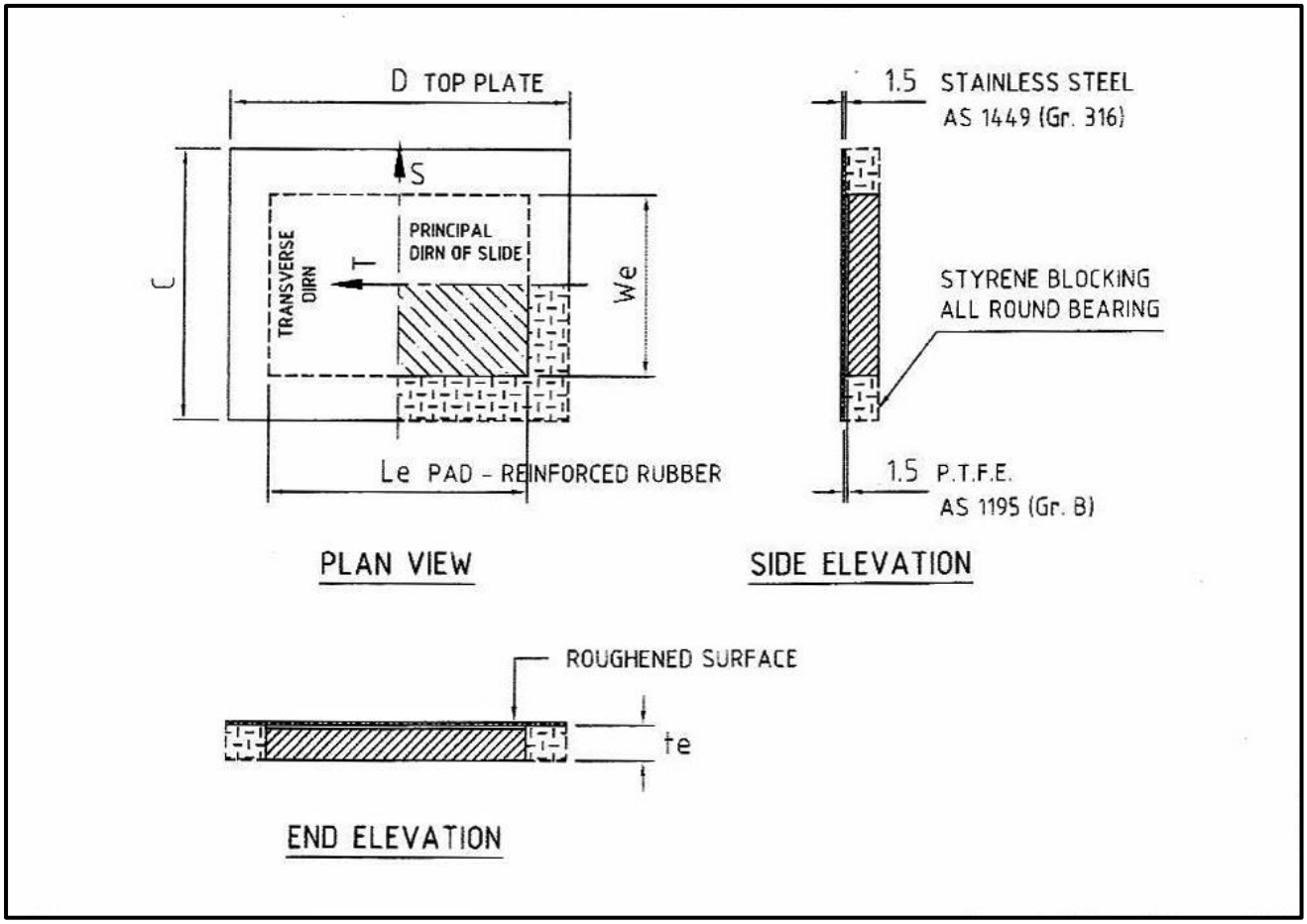


TABLE 5.2 - HERCULES MODIFIED TYPE D SEISMIC BEARINGS

Part Number	Maximum Vertical Working Load (kN)	Top Plate (mm) for ±20mm Expansion	Pad (mm) for 0.021 rads Rotation	Overall Dimensions (mm) Nominal	Bearing Weight (kg)
HLMD(SE)/100	100	175×235×1.5	75×135×16	175×235×19	0.7
HLMD(SE)/150	150	200×250×1.5	100×150×16	200×250×19	0.9
HLMD(SE)/200	200	225×260×1.5	125×160×20	225×260×23	1.2
HLMD(SE)/250	250	235×290×1.5	135×190×25	235×290×28	1.6
HLMD(SE)/300	300	240×315×1.5	140×215×25	240×315×28	1.8
HLMD(SE)/350	350	250×335×1.5	150×235×30	250×335×33	2.3
HLMD(SE)/400	400	260×350×1.5	160×250×30	260×350×33	2.5
HLMD(SE)/450	450	270×370×1.5	170×270×35	270×370×38	3.1
HLMD(SE)/500	500	275×390×1.5	175×290×35	275×390×38	3.4
HLMD(SE)/550	550	290×395×1.5	190×295×35	290×395×38	3.7
HLMD(SE)/600	600	305×400×1.5	205×300×40	305×400×43	4.4

Hercules Seismic Bearings use the same materials as the standard Hercules Modified Bearing except that they have greater all round expansion capacity of ±50mm to accommodate the larger movements which occur during a seismic shock.