

Rod Seals

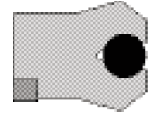
Technical details

Operating conditions

Maximum Speed	1.0 m/sec
Temperature Range	-45°C + 110°C
Maximum Pressure	700 bar

Inch

3.0 ft/sec
-50°F + 230°F
10,000 p.s.i.



Maximum extrusion gap

Pressure bar	160	250	400	500	700
Maximum Gap mm	1.0	0.8	0.6	0.4	0.25
Pressure p.s.i.	2400	3750	6000	7500	10,000

Figures show the maximum permissible gap all on one side using minimum rod \varnothing and maximum clearance \varnothing .

Surface roughness

	μmRa	μmRt	μinCLA	μinRMS
Dynamic Sealing Face $\varnothing d_1$	0.1 <-> 0.4	4 max	4 <-> 16	5 <-> 18
Static Sealing Face $\varnothing D_1$	1.6 max	10 max	63 max	70 max
Static Housing Faces L_1	3.2 max	16 max	125 max	140 max

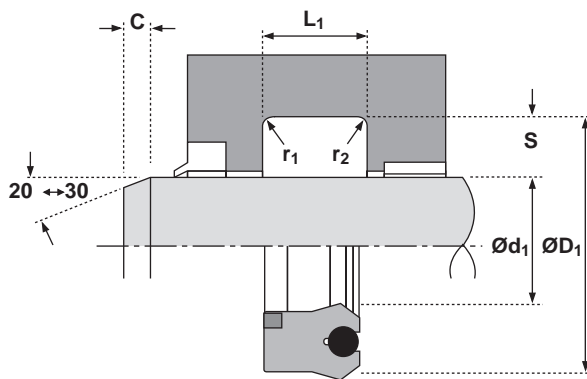
Chamfers & Radii

Groove Section $\leq S$ mm	4.0	5.0	7.5	10.0	12.5	15.0
Min Chamfer C mm	3.0	3.5	5.0	6.5	7.0	8.0
Max Fillet Rad r_1 mm	0.2	0.4	0.8	0.8	1.2	1.6
Max Fillet Rad r_2 mm	0.4	0.8	1.2	1.2	1.6	2.4

Tolerances

$\varnothing d_1$	$\varnothing D_1$	L_1 mm
f9	Js11	+0.25 -0

652



Design

The Hallite 652 is a high pressure rod seal designed specifically for longwall mining applications. The seal design comprises three elements; an O ring energiser*, a polyurethane shell and a polyacetal anti-extrusion ring.

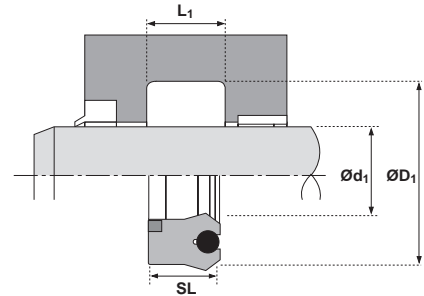
The shell is manufactured in Hythane® 181 to provide flexibility for installation and responsiveness to the sealing lip. The rubber energiser ensures complete lip actuation under all pressure conditions and cushions the seal against shock loadings. The anti-extrusion ring enables the seal to withstand side loads and extreme pressure peaks during operation, even with the extrusion gaps which are the result of using remote plastic bearing strips such as Hallite 506.

*In some cases a profiled energiser (as T621) is used.

Features

- High pressure/shock load capability
- Polyacetal anti-extrusion ring.
- Responsive sealing

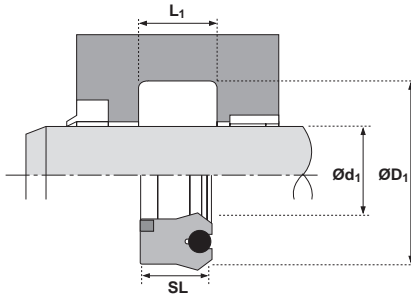
652



Ød ₁	TOL f9	ØD ₁	TOL Js11	SL	L ₁ +0.010 -0	PART No.
32	-0.025 -0.087	44.0	+0.080 -0.080	8.7	9.6	4344111
40	-0.025 -0.087	52.0	+0.095 -0.095	8.7	9.6	4326311
50	-0.025 -0.087	62.0	+0.095 -0.095	8.7	9.6	4326411
60	-0.030 -0.104	69.8	+0.095 -0.095	11.4	12.5	4534910*
60	-0.030 -0.104	72.0	+0.095 -0.095	8.7	9.6	4344211*
60	-0.030 -0.104	75.0	+0.095 -0.095	11.9	13.0	4451211
63	-0.030 -0.104	75.0	+0.095 -0.095	8.7	9.6	4326511*
70	-0.030 -0.104	82.0	+0.110 -0.110	8.7	9.6	4344311*
75	-0.030 -0.104	95.0	+0.110 -0.110	12.5	14.0	4547810*
80	-0.030 -0.104	95.0	+0.110 -0.110	14.5	16.0	4446511
85	-0.036 -0.123	97.0	+0.110 -0.110	8.7	9.6	4344511*
90	-0.036 -0.123	105.0	+0.110 -0.110	14.5	16.0	4428011
100	-0.036 -0.123	115.0	+0.110 -0.110	11.0	12.0	4528010*
100	-0.036 -0.123	115.0	+0.110 -0.110	14.5	16.0	4397611*
105	-0.036 -0.123	120.0	+0.110 -0.110	11.8	13.0	4406711*
105	-0.036 -0.123	120.0	+0.110 -0.110	14.5	16.0	4781810
110	-0.036 -0.123	125.0	+0.125 -0.125	14.5	16.0	4445611
115	-0.036 -0.123	130.0	+0.125 -0.125	14.5	16.0	4455411
120	-0.036 -0.123	135.0	+0.125 -0.125	14.5	16.0	4452011
125	-0.043 -0.143	140.0	+0.125 -0.125	14.5	16.0	4446911

Ød ₁	TOL f9	ØD ₁	TOL Js11	SL	L ₁ +0.010 -0	PART No.
128	-0.043 -0.143	143.0	+0.125 -0.125	14.5	16.0	4581611
130	-0.043 -0.143	145.0	+0.125 -0.125	14.5	16.0	4782410
135	-0.043 -0.143	155.0	+0.125 -0.125	13.6	15.0	4475410*
140	-0.043 -0.143	155.0	+0.125 -0.125	14.5	16.0	4753210
150	-0.043 -0.143	165.0	+0.125 -0.125	14.5	16.0	4389111*
160	-0.043 -0.143	175.0	+0.125 -0.125	11.7	12.8	4484010*
160	-0.043 -0.143	175.0	+0.125 -0.125	14.5	16.0	4405011*
160	-0.043 -0.143	177.0	+0.125 -0.125	14.5	16.0	4767610
160	-0.043 -0.143	185.0	+0.145 -0.145	18.8	20.0	4401711*
165	-0.043 -0.143	182.0	+0.145 -0.145	14.5	16.0	4537411
170	-0.043 -0.143	185.0	+0.145 -0.145	14.5	16.0	4745610
177	-0.043 -0.143	192.0	+0.145 -0.145	14.5	16.0	4445711
180	-0.043 -0.143	195.0	+0.145 -0.145	14.5	16.0	4734610
185	-0.050 -0.165	200.0	+0.145 -0.145	14.5	16.0	4777210
185	-0.050 -0.165	210.0	+0.145 -0.145	18.0	20.0	4546611
190	-0.050 -0.165	205.0	+0.145 -0.145	14.5	16.0	4430811
195	-0.050 -0.165	210.0	+0.145 -0.145	14.5	16.0	4459311
195	-0.050 -0.165	215.0	+0.145 -0.145	14.5	16.0	4550511
200	-0.050 -0.165	220.0	+0.145 -0.145	14.5	16.0	4387611*
210	-0.050 -0.165	230.0	+0.145 -0.145	14.5	16.0	4472911

652



Ød ₁	TOL f9	ØD ₁	TOL Js11	SL	L ₁ +0.010 -0	PART No.
220	-0.050 -0.165	235.0	+0.145 -0.145	14.5	16.0	4759610
220	-0.050 -0.165	240.0	+0.145 -0.145	14.5	16.0	4544510*
225	-0.050 -0.165	240.0	+0.145 -0.145	14.5	16.0	4445811
225	-0.050 -0.165	250.0	+0.145 -0.145	18.0	20.0	4537511
230	-0.050 -0.165	247.0	+0.160 -0.160	14.5	16.0	4767710
230	-0.050 -0.165	249.3	+0.160 -0.160	14.5	16.0	4439411
230	-0.050 -0.165	250.0	+0.160 -0.160	14.5	16.0	4707210
230	-0.050 -0.165	255.0	+0.160 -0.160	22.8	25.0	4555511
235	-0.050 -0.165	255.0	+0.160 -0.160	14.5	16.0	4771410
240	-0.050 -0.165	260.0	+0.160 -0.160	14.5	16.0	4496511
245	-0.050 -0.165	270.0	+0.160 -0.160	18.0	20.0	4546711
250	-0.050 -0.165	270.0	+0.160 -0.160	14.5	16.0	4728810
255	-0.056 -0.186	275.0	+0.160 -0.160	14.5	16.0	4578611
260	-0.056 -0.186	280	+0.160 -0.160	16.4	18.0	4499011
265	-0.056 -0.186	285	+0.160 -0.160	14.5	16.0	4722110
280	-0.056 -0.186	300	+0.160 -0.160	14.5	16.0	4713910
285	-0.056 -0.186	305	+0.160 -0.160	16.4	18.0	4767810
285	-0.056 -0.186	310	+0.160 -0.160	18.0	20.0	4537611
290	-0.056 -0.186	310	+0.160 -0.160	16.4	18.0	4475111

Ød ₁	TOL f9	ØD ₁	TOL Js11	SL	L ₁ +0.010 -0	PART No.
290	-0.056 -0.186	315	+0.160 -0.160	18.0	20.0	4759410
295	-0.056 -0.186	315	+0.160 -0.160	16.4	18.0	4598211
300	-0.056 -0.186	320	+0.180 -0.180	14.5	16.0	4525110*
305	-0.056 -0.186	325	+0.180 -0.180	16.4	18.0	4473011
305	-0.056 -0.186	330	+0.180 -0.180	18.0	20.0	4546811
305	-0.056 -0.186	335	+0.180 -0.180	16.4	18.0	4721910
320	-0.062 -0.202	340	+0.180 -0.180	14.5	16.0	4544410*
320	-0.062 -0.202	340	+0.180 -0.180	16.4	18.0	4707310
325	-0.062 -0.202	355	+0.180 -0.180	18.0	20.0	4555711
335	-0.062 -0.202	355	+0.180 -0.180	16.4	18.0	4496611
340	-0.062 -0.202	360	+0.180 -0.180	18.5	20.5	4788110
340	-0.062 -0.202	365	+0.180 -0.180	18.0	20.0	4732810
350	-0.062 -0.202	375	+0.180 -0.180	18.0	20.0	4718010
355	-0.062 -0.202	380	+0.180 -0.180	18.0	20.0	4578411
360	-0.062 -0.202	385	+0.180 -0.180	18.0	20.0	4781110
370	-0.062 -0.202	395	+0.180 -0.180	18.0	20.0	4579710
380	-0.062 -0.202	405	+0.200 -0.200	18.0	20.0	4752010*
390	-0.062 -0.202	415	-0.200 -0.200	18.0	20.0	4730010*
410	-0.062 -0.202	435	-0.200 -0.200	18.0	20.0	4785110*

* Indicates product fitted with profiled energiser