

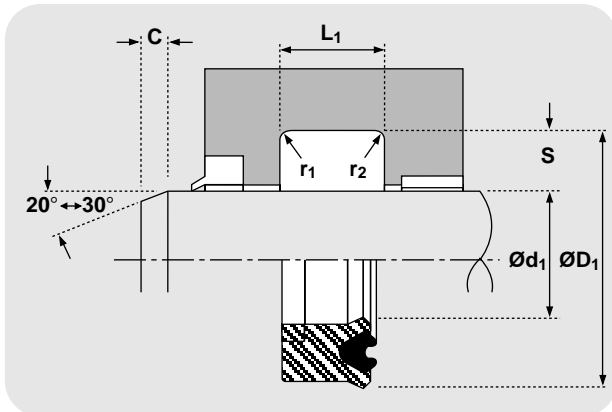


# 652

TECHNICAL DETAILS	
OPERATING CONDITIONS	
MAXIMUM SPEED	1.0 m/sec
TEMPERATURE RANGE	-45°C + 110°C
MAXIMUM PRESSURE	700 bar
	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
SURFACE ROUGHNESS	
DYNAMIC SEALING FACE $\varnothing d_1$	0.1 ↔ 0.4 4 max
STATIC SEALING FACE $\varnothing D_1$	1.6 max 10 max
STATIC HOUSING FACES $L_1$	3.2 max 16 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

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

$\mu mRa$	$\mu mRt$	$\mu inCLA$	$\mu inRMS$
0.1 ↔ 0.4	4 max	4 ↔ 16	5 ↔ 18
1.6 max	10 max	63 max	70 max
3.2 max	16 max	125 max	140 max



## DESIGN

The Hallite 652 is a high pressure rod seal designed specifically for longwall mining applications. The seal design comprises three elements; a unique profiled NBR 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 an O ring energiser is used

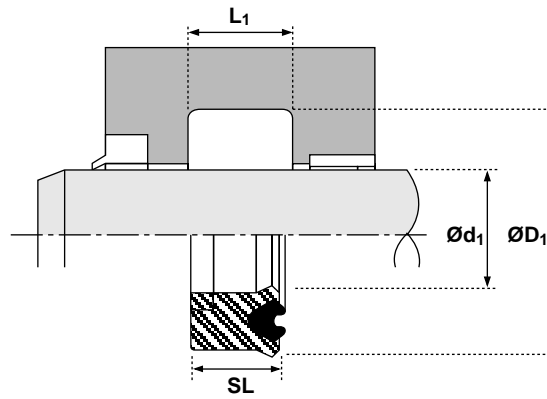
## FEATURES

- HIGH PRESSURE/SHOCK LOAD CAPABILITY
- POLYACETAL ANTI-EXTRUSION RING.
- RESPONSIVE SEALING

## Rod seals

# 652

## metric



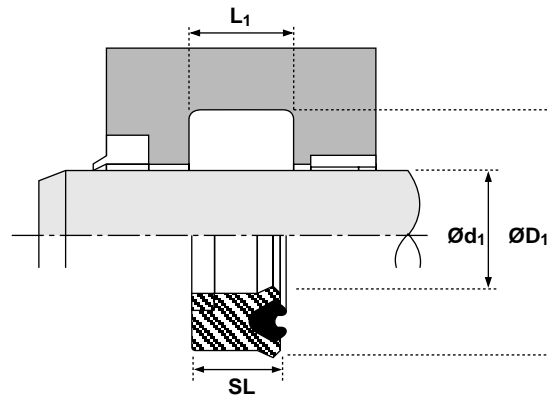
Ød <sub>1</sub>	TOL f <sub>9</sub>	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.25-0	PART No.
32	-0.025 -0.087	44.0	+0.080 -0.080	8.7	9.6	4344111
40	-0.025 -0.087	52.0	+0.095 -0.095	8.7	9.6	4326311*
50	-0.025 -0.087	62.0	+0.095 -0.095	8.7	9.6	4326411*
56	-0.030 -0.104	71.0	+0.095 -0.095	11.4	12.5	4557110
60	-0.030 -0.104	69.8	+0.095 -0.095	11.0	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
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*
125	-0.043 -0.143	140.0	+0.125 -0.125	14.5	16.0	4446911*
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

Ød <sub>1</sub>	TOL f <sub>9</sub>	ØD <sub>1</sub>	TOL Js11	SL	L <sub>1</sub> +0.25-0	PART No.
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	12.3	13.5	4483110
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*
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*
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	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*
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*

Rod seals

# 652

metric



$\text{Ø}d_1$	TOL f9	$\text{Ø}D_1$	TOL Js11	SL	$L_1$ +0.25-0	PART No.
280	-0.056 -0.186	300	+0.160 -0.160	14.5	16.0	4713910*
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*
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

$\text{Ø}d_1$	TOL f9	$\text{Ø}D_1$	TOL Js11	SL	$L_1$ +0.25-0	PART No.
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	335	+0.180 -0.180	16.4	18.0	4496611*
340	-0.062 -0.202	365	+0.180 -0.180	18.5	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*
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	-0.180 -0.180	18.0	20.0	4730010

\* Indicates products fitted with an O ring energiser.