Dseal Omega Seal

Omega-Shaped Elastomeric Cap Seal & Expansion Joint

PRODUCT OVERVIEW

Dseal Omega Seal is a heavy-duty, omega-shaped elastomeric expansion joint and cap seal engineered for structures that must absorb very large movement in every direction while staying completely watertight. Originally developed as a secondary seal for immersed tunnels working alongside the primary tunnel gasket, the omega profile is now used across bored tunnels, aqueducts, ship lifts and railway and long-span road bridges. The seal is compression-moulded from chloroprene (neoprene) elastomer as a single vulcanized unit, giving it the strength to withstand high water pressure combined with large axial, radial and rotational movement between the two bridged structures. It is the ideal solution for joints where large gap movements are expected from temperature change, settlement or seismic action. For the highest water heads the omega can be supplied fabric-reinforced with load-bearing plies and a rubber cover, and force-compression curves and elongation limits can be calculated for each project. On railway and highway bridge decks the Omega Seal is installed as a cap seal: the omega profile bridges the deck gap and is clamped down each side by hot-dip galvanized steel plates and rigid anchor bolts, forming a durable, drained, watertight running joint.

TECHNICAL SPECIFICATIONS

Profile	Omega-shaped cap seal
Elastomer	Chloroprene (neoprene / CR)
Hardness	63 +/- 5 Shore A
Tensile strength	17 MPa min.
Elongation at break	400% min.
Compression set	35% max.
Movement	Very high — axial, radial & rotational
Clamping plate	Hot-dip galvanized steel, 80 x 8 mm
Anchor bolts	16 mm dia @ 400 mm c/c, M35 recess
Water pressure	High (reinforced variant for max. head)

DIMENSIONS

Profile	Omega-shaped (cap seal)
Clamping plate	Hot-dip galvanized steel, 80 mm wide x 8 mm thick
Plate oblong hole	40 x 20 mm at 1 m centres
Anchor bolt	16 mm dia at 400 mm c/c
Bolt recess grout	M35 grade concrete
Surface fall	1% (for drainage)

MATERIALS

Seal	Chloroprene (neoprene / CR) elastomer, compression moulded
Manufacture	Cast as a single unit, vulcanized under uniform heat & pressure
Reinforced variant	Fabric plies with rubber cover (high water pressure)
Clamping plate	Hot-dip galvanized steel

Fixings

Rigid anchor bolts; nut tightened & tack-welded

PERFORMANCE DATA

Hardness	63 +/- 5 Shore A
Tensile strength	17 MPa minimum
Elongation at break	400% minimum
Compression set	35% maximum
Movement	Very high — axial, radial & rotational
Water pressure	High (reinforced variant for maximum head)

INSTALLATION GUIDELINES

1. Form the deck edges to a 1% surface fall so water drains clear of the joint as detailed.
2. Set the rigid anchor bolts (16 mm dia at 400 mm c/c) into recesses cast in each deck and fill the recesses with M35 grade concrete.
3. Position the Omega cap seal over the gap so the omega profile covers the joint and the flat wings seat perfectly on the deck slab each side.
4. Punch the seal wings to suit the oblong holes and place a galvanized steel plate (80 x 80 mm, with a 40 x 20 mm oblong hole) over each wing so the bolt passes through both.
5. Tighten the nut on every bolt firmly and tack-weld it to lock the assembly against loosening.
6. Inspect the whole installation for correct seating, clamping and drainage before proceeding.
7. Lay the wearing coat carefully on each side without disturbing or damaging the seal.

COMPLIANCE & CERTIFICATIONS

- After accelerated ageing: change in hardness +15 max., tensile strength -15% max., elongation -40% max.
- Chloroprene grades selected for low crystallization rate and adequate shelf life
- Watertight, high-movement seal for bridges, tunnels, aqueducts and ship lifts
- Manufactured by Dseal Solutions Private Limited - ISO 9001:2015, ISO 14001:2015, ISO 45001:2018
- Force-compression curves and elongation limits calculated per project water pressure