BOLTED PLATE STRUCTURES

TUBOSIDER
GRUPPO RUSCALLA
UNITED KINGDOM LTD

Highways Agency
Type Approval
Certificate No: BE1/2/91

Lloyds Quality Assurance
Certificate No: LRC160272

UNDERPASS

SILO

CONVEYOR TUNNEL

BRIDGE RELINING

INTRODUCTION

These structures are constructed from curved, corrugated, galvanised steel plates, which are bolted together on site.

Combinations of different sized plate's means that a vast range of profiles can be produced. **TUBOSIDER** also produce structures in 4 different corrugations, which ensure there is always an economic option for any application.

Detailed information on our range of structures can be downloaded from our website at www.tubosider.co.uk or telephone the sales office.

MULTI-SPAN CULVERT

TUBOSIDER Bolted Plate Structures are fully Type Approved by the Highways Agency, certificate No: BE1/2/91.

Our structures are also approved in most EU member states and have been used in more than 50 countries worldwide since 1964.

APPLICATIONS:

- Culverts
- Structure re-lining
- Vehicle or pedestrian underpasses
- Rail tunnels
- Aggregate recovery tunnels
- Conveyor tunnels
- Silos
- Vertical soakaways
- Pile casings
- Aerial pipelines or walkways
- Embankment load reduction
- Sacrificial form work

STRUCTURAL PRINCIPLES & DESIGN METHODS

Corrugated steel structures are flexible structures whose structural behaviour is based on Ring Compression Theory whereby the steel/soil composite transfers the imposed live and dead loads to the surrounding fill.

The load bearing capacity is a function of span, steel thickness and surrounding backfill strength.

Ground pressures exerted at formation are typically only one third of those generated by rigid concrete structures, a significant feature in poor ground conditions.

Design is undertaken to Highways Agency standard BD12 for UK and Republic of Ireland projects and also for many overseas locations.

TUBOSIDER also design to national standards of Italy, France, Spain, Australia, New Zealand, Germany and USA whenever required.

DURABILITY

Corrugated steel structures have been used for more than 100 years. Modern standards of galvanising and secondary protection ensure that a design life of 120 years is achieved to meet the requirements of BD12. **TUBOSIDER** can apply a range of secondary protective coatings to cope with any environmental condition.

A variety of invert protections are also available to protect against abrasion in hydraulic structures.

END TREATMENTS

The ends of **TUBOSIDER** structures can be cut to a bevel or skew, which means that expensive headwalls and wingwalls can often be eliminated. An r.c. collar beam is required when the end of the structure is skewed or bevelled (ask for more details).

QUALITY ASSURANCE

All **TUBOSIDER** Bolted Plate products are manufactured at our plant at Mongardino near Turin, the largest and most modern plant of its type in the world.

All products are Quality Assured to BS EN ISO9001 Lloyds Register Certificate No: LRC160272

The product is Highways Agency Type Approved. Certificate No: BE1/2/91

ASSEMBLY & INSTALLATION

All bolted plate structures are supplied with a detailed plate layout drawing showing where all components fit. The assembly method can vary according to structure type, geometry and site conditions. **TUBOSIDER** can advise on this.

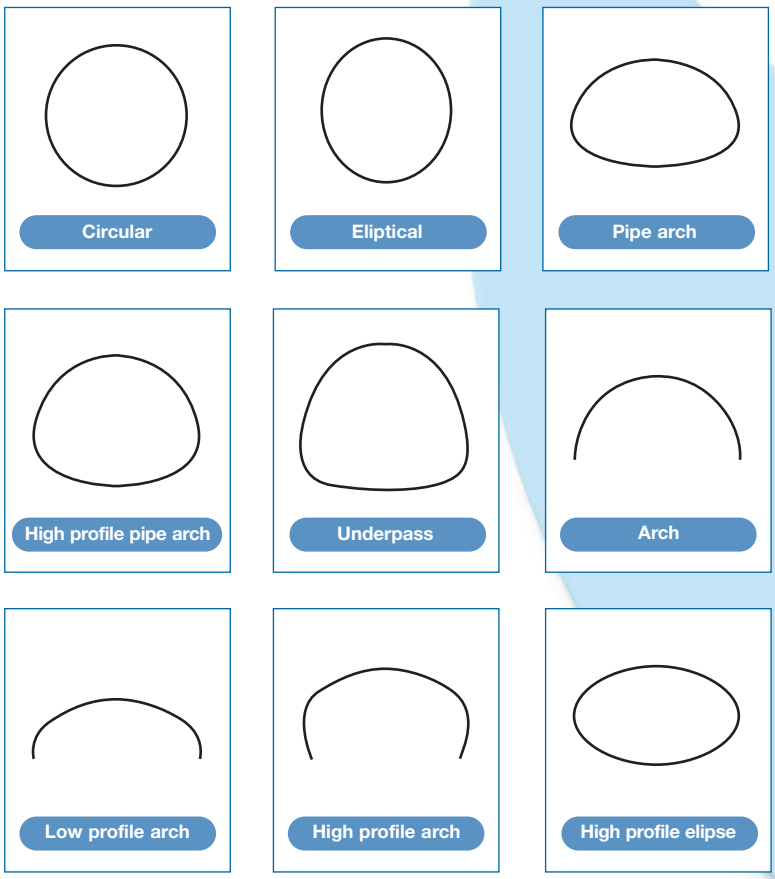
It is vital to ensure that good backfilling practice is employed. The structure is a steel/soil composite and the backfill quality and compaction is as important as the steel itself. Consult **TUBOSIDER** for advice.

TUBOSIDER SERVICE

TUBOSIDER provide comprehensive support at all stages of a project from feasibility study through detailed design to installation and commissioning.

TUBOSIDER has a vast fund of experience in many unusual applications. This accumulated expertise is avilable to you from **TUBOSIDER** engineers.

PROFILES



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