SANGIR

SanFlo®
Drainage
Systems

PE MANHOLES & CHAMBERS

for drainage systems

sangir.com

Sangir is India's premium manufacturer to offer a broad variety of Thermoplastic Piping, Sheet & Roto Molded Solutions in HDPE, PP, PVDF, C-PVC, PERT, UHMWPE, PVC, PFA & HIPS, ABS and PC for applications across all industries for water, gas, fuel, slurry, air transport, storage and containment.

In existence since 1982, it now exports products to over 35 countries worldwide and enjoys loyalty of over 1500 customers. An 9001:2008 certified company, Sangir provides internationally accepted and certified products as per ISO, ASTM, DIN, ASNZ, JIS and IS standards. It has product certifications with WRAS, UL, NSF and BIS. Products are made using various moulding techniques and a full-fledged fabrication department to cater to customer specific requirements

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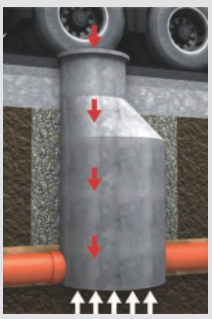
Introduction to PE Manholes

The Sangir PE Manhole is a modular system that allows for various combinations.

Polyethylene (PE) Manholes are the fast replacing the traditional concrete manholes due to the contemporary features they come with. The need for improved quality of products has permeated in the Construction Industry also primarily because they are extremely fast to install, offer extended life and are can be mass produced in short periods of time. International standards are now available for specifications of manholes which are widely being accepted around the world.

Features of SANGIR PE Manholes

- Excellent dissipation of load and back-pressure away from manhole



Concrete manhole

Sangir PE Manhole

- Made out of 100% virgin material
- Monolithic construction
- Strong and durable Plastic Steps
- Sturdy design
- Quick construction
- Compliance with requirements of EN 13598

Advantages of PE Manholes

- Light weight and durable
- Leak proof system
- No infiltration or exfiltration
- Environment friendly
- Optimized Project execution
- Highly resistant to heat& chemicals
- Excellent resistant to bacteria
- Smooth flow of media
- Modular System

Standards

PE Manholes are manufactured as per following standards:

- EN 13598-1:2003;
- EN 13598-2:2009
- EN 476

Welding System

The parts of the manholes are welded integrally in the workshop itself and delivered in ready for installation condition in the sites as per the Client's dimensional requirements. If any welding of parts is required at site, it may be easily done using a plastic extrusion welding machine, also available from SANGIR.

Product Range

Gully & Chambers

DN400mm Gully

Product Code	Height	DN	Description
CAS 40.20/80	800	400	Gully - Syphonic Outlet
CAA 40.20/80	800	400	Gully - Bottom Outlet

DN 400mm Chambers

Product Code	Height	Connection	Connection Diameter	Description
1EB 40/80	800	1 x	200/160/125/110	Flow Base
3EB 40/80	800	3 x	200/160/125/110	Flow Base
1EB 40/100	1000	1 x	200/160/125/110	Flow Base
3EB 40/100	1000	3 x	200/160/125/110	Flow Base

DN500mm and DN600mm

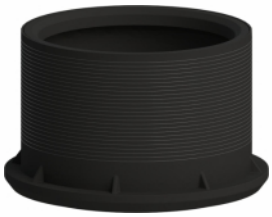
Product Code	Description	Height
CHM 50	DN 500mm straight chamber	710
CHM 60	DN 600mm straight chamber	955

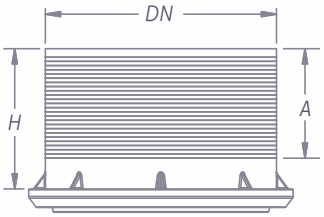
Please note: All dimensions mentioned are in millimeters (mm) unless otherwise specified.

Product Range

DN600 mm Manholes

Elevation Unit

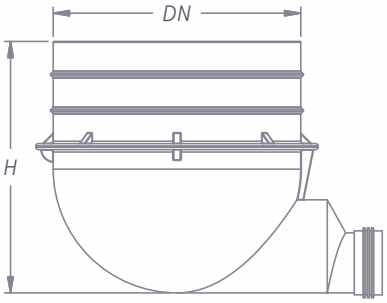




Product Code	Height *(H)*
GE 60/40	400

*Height adjustment (A) up to 250mm possible.

Base Unit



Product Code	Height *(H)*	Connection	Connection Diameter	Description
3TE 60.30/80	800	3 x	315/250/200	Flow Base
5TE 60.16/80	800	5 x	160/110	Flow Base
TE 60.20/80	800	1 x	200	Round Base
TE 60/80	800	-	-	Round Base
TED 60/40	400	-	-	Flat Base

Covers

TSE certified covers are offered for class A15 and B125 traffic load as per TS1478 EN124 standard.

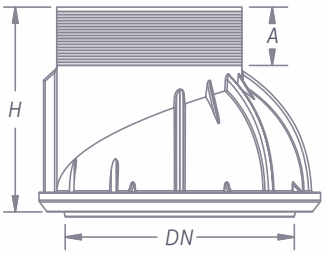
Covers	Size Options
Lockable Composite	DN 600 | DN 400
Lockable Gas Tight	DN 600 | DN 400
PE Cover	DN 600 | DN 400
Cast Iron Gully Grating	DN 400

Please note: All dimensions mentioned are in millimeters (mm) unless otherwise specified.

Product Range

DN800 mm Manholes

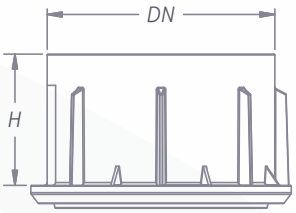
Cone



Product Code	Height *(H)*
KE 80/45	450
KE 80/70	700

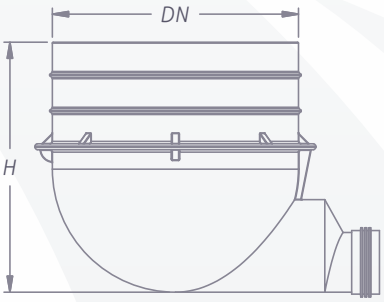
*Height adjustment (A) up to 250mm possible.

Elevation Unit



Product Code	Height *(H)*
GE 80/50	500
GE 80/100	1000

Base Unit



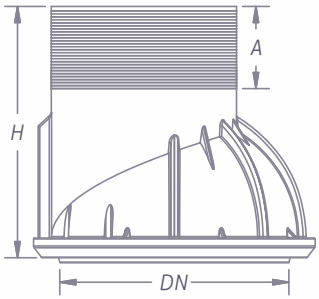
Product Code	Height *(H)*	Connection	Connection Diameter	Description
3TE 80.30/80	800	3 x	315 / 250 / 200	Flow Base
1TE 80.30/80	800	1 x	300 / 200	Flow Base
1TEX 80.30/80	800	1 x	300 / 200	Flow Base
TEK 80.30/80	800	1 x	200	Round Base
TEK 80/80	800	-	-	Round Base
TED 80/50	500	-	-	Flat Base
TED 80/100	1000	-	-	Flat Base

Please note: All dimensions mentioned are in millimeters (mm) unless otherwise specified.

Product Range

DN1000 mm Manholes

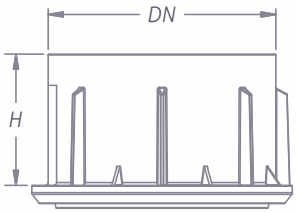
Cone



Product Code	Height *(H)*
KE 100/75 E	750
KE 100/100 E	1000

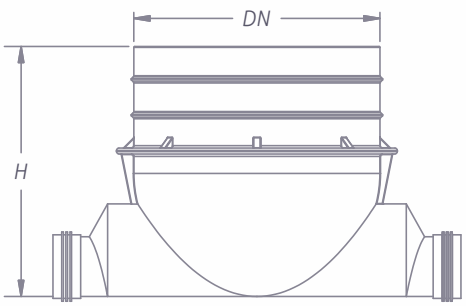
*Height adjustment (A) up to 250mm possible.

Elevation Unit



Product Code	Height *(H)*
GE 100/50	500
GE 100/100	1000

Base Unit



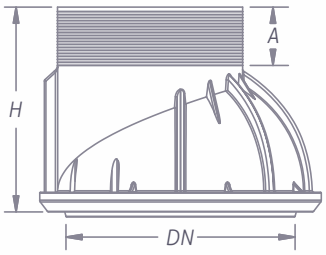
Product Code	Height *(H)*	Connection	Connection Diameter	Description
3TE 100.30/75	750	3 x	315 / 250 / 200	Flow Base
1TE 100.30/75	750	1 x	300 / 200	Flow Base
1TEX 100.30/75	750	1 x	300 / 200	Flow Base
1 TE 100.50/75	750	1 x	500 / 400	Flow Base
TEK 100.30/75	750	1 x	200	Round Base
TEK 100/100	1000	-	-	Round Base
TED 100/50	500	-	-	Flat Base
TED 100/100	1000	-	-	Flat Base

Please note:
All dimensions mentioned are in millimeters (mm) unless otherwise specified.

Product Range

DN1200 mm Manholes

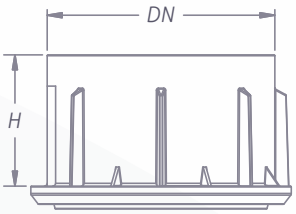
Cone



Product Code	Height *(H)*
KE 120/75 E	750
KE 120/100 E	1000

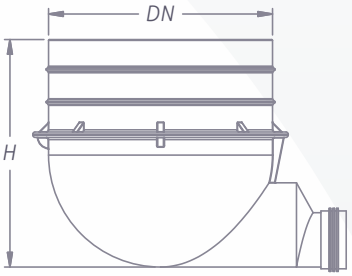
*Height adjustment (A) up to 250mm possible.

Elevation Unit



Product Code	Height *(H)*
GE 120/50	500
GE 120/100	1000

Base Unit



Product code	Description	Height options
TEK 120/75	Round base	750
TED 120/50	Flat base	500

Please note:
All dimensions mentioned are in millimeters (mm) unless otherwise specified.

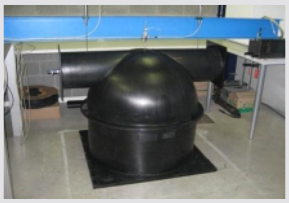
Welding Tools

Extrusion Welding Machine

Welding Rods

Quality Standards

Vacuum Test - Base Unit



Test Parameters	Requirements
Test pressure = -H X 0.1 bar	No collapse
H= manhole height [Meter]	No cracks
Testing time 1000 hours	Vertical deflection - max 10% of pipe diameter

Water Tightness

Test Parameters	Requirements
Performed at:	No leakage
0.5 bar (high pressure)	
0.05 bar (low pressure)	
-0.3 bar (vacuum)	

Stiffness - Elevation Unit

Test Parameters	Requirements
$S = \frac{0.0186}{L} \times \frac{F}{Y}$	S ≥ 2 kN/m2

S=stiffness; F=force (Newton); L=length (meter); Y=deflection (meter)

Impact tests for Base

Test Parameters	Requirements
a) 1 kg dropping 2.5 m eight at 23±2°C	No cracks or other damages
b) 1 kg dropping 0.5 m height at -10±2°C	

Please note: All dimensions mentioned are in millimeters (mm) unless otherwise specified.

Quality Standards (contd.)

Load tests for Steps

Test Parameters	Requirements
Vertical load 200 kg	Remaining deflection maximum 5mm

Vertical load tests - for whole Manhole

Test Parameters	Requirements
Testing at 10 tons (class D)	No collapse. No cracks

This load equals a 40 tons truck. 40 tons / 4 wheels = 10tons

Other quality tests:

- Density
- Melt flow index
- Impact strength
- Carbon dispension & content

Sangir believes in continuous improvement in its product design and product range.

To continue providing the best of our products and services, we reserve the right to modify product specifications without notice. Customers should request for latest drawings before placing orders.

Public Tender Text Example:

PE Chamber / Manhole of DN 600 / 800 / 1000 / 1200 – channel or spherical bottom , suitable for pipe connection upto DN / OD 200mm. 100% virgin materials without recycling content, ultimate elongation at tear >= 200%, monolithic construction, horizontal reinforcement rings to secure uplift retention, valid certificate issues by TSE, Type Sangir / Huge or equal.

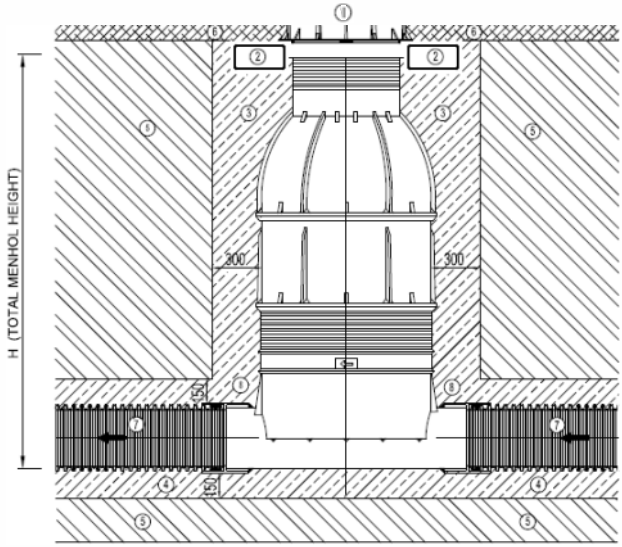
Installation

Installation for Gully

Steps in installation:

- Excavate a pit for installing the gully.
- Insert the gully into the pit in accordance with outlet pipe horizontal and vertical connection measurements.
- Back fill as per ENV 1046.
- Use grating manufactured as per TS 1478 EN 124 class C250.
- Strengthen the grating sitting surface by filling Class C25 concrete in the gap between backfill and bottom face of grating.

Installation for Manholes



1 cast iron/composite cover
2 reinforced concrete ring
3 backfill
4 base fill
5 natural soil
6 surface paving (asphalt)
7 corrugated pipe
8 sleeve

Foundation Preparation:

PE Manholes /chambers should be installed on solid compacted foundation using suitable filling materials. Grain material size upto 32mm , crushed material upto 16mm should be used. Foundation should be prepared in layers of 15-20 cm and compacted upto 97% proctor.

Installation of chamber

Due to Low weight manual installation may be done. Inlet outlet chamber should be properly oriented before chamber is lowered in the pit.

Chamber Backfilling

Backfilling the chamber pit requires use of materials same as in foundation above. 90% proctor in 30cm thick layers in the area of radius 50cm from chamber wall. Base of the chamber should be specifically attended. It should be filled and compacted with hand tools to prevent damage to chamber.

Serving customer across the globe:

SANGIR® Piping System

PlastNova® Sheets, Film & Profiles

KleanChute Waste Disposal Systems

SanFloats® Floatation Systems

SanServe Custom Services

Sangir offers a wide range of industrial plastics solutions for an array of applications and industries.

Among our impressive portfolio of products you will find Pipes & Fittings, made from high quality PE, PP, PP-H, PVDF, C-PVC and PERT, sheets made from PE, PP, PP-H, UHMW-PE, PVDF, C-PVC, PERT, PVC Rigid and PVC Foam, HIPS, ABS, fabric backed sheets, welding & solid rods and Stainless Steel disposal systems.

SANGIR

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