## Rules and Standards for large diameter plastic pipes

Below the most interesting standards and rules are listed by their field of application and by their number.

					General Polyerhylene Raw Material Properties Pipe system Fittings, Assemblies Manholes							
nstitution	No.	Title / Description	General	Polyon	Polym	Rawa	ipe c.	Fittings, A	Manholes	Join		
DIN EN ISO	178	Plastics – Plastics, Determination of flexural properties	r i	_		-	1			7		
DIN EN ISO	527	Plastics - Plastics, Determination of tensile properties								_		
DIN EN ISO	527-1	Part 1: General Principles							_	_		
DIN EN ISO	527-2	Part 2: Test conditions for moulding and extrusion plastics								_		
DIN EN ISO	527-4	Part 4: Test conditions for isotropic and orthotropic fibre reinforced plastic						П		_		
PCSTONALITOLOGICANTENIS	Decree and	composites								_		
DIN EN ISO	580	Plastics piping and ducting systems - Injection-moulded thermoplastics fittings - Methods for visually assessing the effects of heating										
DIN EN	728	Plastics piping and ducting systems - Polyolefin pipes and fittings - Determination of oxidation induction time										
DIN EN	744	Plastics piping and ducting systems - Thermoplastics pipes - Test method for resistance to external blows by the round-the-clock-method										
DIN EN ISO	899	Plastics - Determination of creep behaviour								_		
DIN EN ISO	899-1	Part 1: Tensile creep								_		
DIN EN ISO	899-2	Part 2: Flexural creep by three-point loading								_		
DIN PAS (Spec)	1065	Spirally wound pipes made from polyethylene (PE100)	- 1			C						
DIN EN ISO	1133	Plastics - Determination of the melt volume-flow rate (MVR)and melt mass-										
DIN EN ISO	1122.1	flow rate (MFR) of thermoplastics materials  Part 1: Standard method	$\vdash$			-				_		
DIN EN ISO	1133-1	Part 1: Standard method  Part 2: Method for materials sensitive to time-temperature history and/or						$\vdash$		_		
		moisture Thermoplastics pipes, fittings and assemblies for the conveyance of fluids -								_		
DIN EN ISO	1167	Determination of the resistance to internal pressure										
DIN EN ISO	1167-1	Part 1: General method										
DIN EN ISO	1167-2	Part 2: Preparation of pipe test pieces										
DIN EN ISO	1167-3	Part 3: Preparation of components	- 5					-				
DIN EN ISO	1167-4	Part 4: Preparation of assemblies					-		-	_		
DIN EN ISO	1183	Plastics - Methods for determining the density of non-cellular plastics										
DIN EN ISO	1183-1	Part 1: Immersion method, liquid pyknometer method and titration method										
DIN EN	1277	Plastics piping systems - Thermoplastics piping systems for buried non- pressure applications - Test methods for leaktightness of elastomeric sealing ring type joints										
DIN EN	1295-1	Structural design of buried pipelines under various conditions of loading - Part 1: General requirements										
DIN EN	1610	Construction and Testing of Drains and Sewers								Π		
DIN EN ISO	1872	Plastics, Polyethylene (PE) moulding and extrusion materials							Ü			
DIN EN ISO	1872-1	Part 1: Designation system and bases for specification										
DIN EN ISO	1872-2	Part 2: Preparation of test specimens and determination of properties										
DIN EN ISO	1873	Plastics - Polypropylene (PP) moulding and extrusion materials					-			_		
DIN EN ISO	1873-1	Part 1: Designation system and basis for specification								_		
DIN EN ISO	1873-2	Part 2: Preparation of test specimens and determination of										
DIN EN	1979	Plastics piping and ducting systems - Thermoplastics spirally-formed structured-wall pipes - Determination of the tensile strength of a seam										
DIN EN ISO	2505	Thermoplastics pipes - Longitudinal reversion - Test methods and parameters										
DIN	8074	Polyethylene (PE) - Pipes PE 63, PE 80, PE 100, PE-HD - Dimensions										
OIN	8075	Polyethylene (PE) pipes - PE 63, PE 80, PE 100, PE-HD - General quality requirements, testing										
DIN EN ISO	9000	Quality management systems - Fundamentals and vocabulary								_		
DIN EN ISO	9001	Quality management systems – Requirements			Ť.				, j	_		
DIN EN ISO	9967	Thermoplastics pipes - Determination of creep ratio										
DIN EN ISO	9969	Thermoplastics pipes - Determination of ring stiffness										
DIN EN	10204	Types of inspection documents			Ī							
DIN EN	12201	Plastics piping systems for water supply - Polyethylene (PE)										
DIN EN	12201-1	Part 1: General	- 5		9							
DIN EN	12201-2	Part 2: Pipes								_		
DIN EN	12201-3	Part 3: Fittings								_		
DIN EN	12814	Testing of welded joints of thermoplastics semi-finished products				_	-					
DIN EN	12814-1	Part 1: Bend test					-	$\vdash$				
DIN EN	12814-2	Part 2: Tensile test				1	1					

		Title / Description							Raw Material Properties Pipe 9sstem Fittings, Assemblies Vanholes						
Institution	No.	Title / Description	/ હૈ	\ Q	100	\ a	1 1	11/1	1 2 /	10					
DIN EN	13100-1	Non destructive testing of welded joints of thermoplastics semi-finished products Part 1: Visual examination													
DIN EN	13476	Plastics piping systems for non-pressure underground drainage and sewerage - Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE)													
DIN EN	13476-1	Part 1: General requirements and performance characteristics													
DIN EN	13476-2	Part 2: Specifications for pipes and fittings with smooth internal and external surface and the system, Type A								_					
DIN EN	13476-3	Part 3: Specifications for pipes and fittings with smooth internal and profiled external surface and the system, Type B													
DIN CEN (TS)	13476-4	Part 4: Guidance for the assessment of conformity								$\dashv$					
DIN EN ISO	13477	Thermoplastics pipes for the conveyance of fluids - Determination of resistance to rapid crack propagation (RCP) - Small-scale steady-state test (S4 test)													
DIN EN ISO	13478	Thermoplastics pipes for the conveyance of fluids - Determination of resistance to rapid crack propagation - (RCP) - Full-scale test													
DIN EN ISO	13479	Polyolefin pipes for the conveyance of fluids - Determination of resistance to crack propagation - Test method for slow crack growth on notched pipes													
DIN EN	13598	Plastics piping systems for non-pressure underground drainage and sewerage - Unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE)						6							
DIN EN	13598-1	Part 1: Specifications for ancillary fittings including shallow inspection chambers													
	12500.0	Part 2: Specifications for manholes and inspection chambers in traffic	$\vdash$							$\dashv$					
DIN EN	13598-2	areas and deep underground installations													
DIN EN	14802	Plastics piping systems - Thermoplastics shafts or risers for inspection chambers and manholes - Determination of resistance against surface and traffic loading													
DIN EN	14830	Thermoplastics inspection chamber and manhole bases - Test methods for buckling resistance								Ц					
prEN	15013	Plastics piping systems – Non-pressure drainage and sewerage systems buried in the ground													
DIN CEN/TS	15223	Plastics piping systems - Validated design parameters of buried thermoplastics piping systems													
DIN	16961	Thermoplastics pipes and fittings with profiled wall and smooth pipe inside													
DIN	16961-1	Part 1: dimensions													
DIN	16961-2	Part 2: technical delivery specifications							-	$\dashv$					
DIN	16917	Thermoplastic Pipes and Fittings with structured wall and smooth pipe inside — Large diameters bigger than DN 1200 for buried application													
DIN	16917-1	Part 1: General requirements and performance characteristics					11								
DIN	16917-2	Part 2: Specifications for pipes and fittings  Prefabricated high density polyethylene (PE-HD) manholes for use in	$\vdash$							$\dashv$					
DIN	19537-3	sewerage systems; dimensions and technical delivery conditions					0			4					
DIN Spec	19674	Plastic piping systems - Glass Fiber Reinforced Polyethylene (PE-GF) for water supply and for pressure drainage and sewerage systems													
OIN Spec	19674-1	Part 1: general													
OIN Spec	19674-2	Part 2: pipes							$\Box$	$\Box$					
ASTM	D 638	Standard Test Method for tensile properties of plastics	_						-	$\dashv$					
STM	D 792	Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement													
ASTM	D 1238	Standard Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer													
ASTM	F 1759	Standard Practice for Design of High-Density Polyethylene (HDPE) Manholes for Subsurface Applications													
ASTM	D 2412	Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading													
ASTM	F 2720	Glass Fiber Reinforced Polyethylene (PE-GF) Spiral Wound Large Diameter Pipe													
ASTM	D 3350	Standard Specification for Polyethylene Plastics Pipe and Fittings Materials													
ASTM	D 3261	Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing													

			Gener	Polyger	War.	Raw A.	Pipe s.	Fittings, A.	Manholes	Jointing
Institution	No.	Title / Description	/ ଓ	/ &	18	18	1 12	/ iž	2 /	<u>§</u>
ASTM	F 894	Standard Specification for Polyethylene (PE) Large Diameter Profile Wall Sewer and Drain Pipe								
	161	Thermoplastics pipes for the conveyance of fluids - Nominal outside							$\neg$	_
ISO	161	diameters and nominal pressures								_
ISO	161-1	Part 1: Metric series								_
SO SO	161-2	Part 2: Inch-based series							-	-
SO	6259 6259-1	Thermoplastic pipes - Determination of tensile properties - Part 1: General test method	$\vdash$						-	$\dashv$
SO	6259-3	Part 3: Polyolefin pipes	$\vdash$							$\dashv$
so	4427	Plastics piping systems - Polyethylene (PE) pipes and fittings for water								
HTM	1,000	supply							-	_
SO SO	4427-1 4427-2	Part 1: General				-				_
SO	4427-2	Part 2: Pipes Part 3: Fittings	-		- 1	-				_
SO	4427-5	Part 5: Fitness for purpose of system				-			$\neg$	_
so	12091	Structured-wall thermoplastics pipes - Oven test								
		Polyethylene(PE) pipes and fittings - Determination of the								
ISO	13953	tensile strength and failure mode of test pieces from a butt-								
		fused joint  Plastics pipes and fittings - Peel decohesion test for	$\vdash$			H				
ISO	13954	polyethylene (PE) electrofusion assemblies of nominal								
		outside diameter greater than or equal to 90 mm								
ISO	13968	Plastics piping and ducting systems - Thermoplastics pipes - Determination								
	Panicos	of ring flexibility	$\vdash$		-				-	_
		Plastic piping systems - Glass Fiber Reinforced Polyethylene (PE-GF) for water supply and for pressure drainage and sewarage systems								
SO/CD	29561	(standardization								
		currently in reactivation process)								
AWWA	M55	PE Pipe – Design and Installation								
DWA	A-110	Hydraulic Dimensioning and Performance Verification of Sewers and			- "					
DVVA	A-110	Drains								_
DWA	A-112	Hydraulic Dimensioning and Performance Verification of								
ATI / DUBANI	I Consession	nonstandard constructions at Sewers and Drains							$\rightarrow$	-
ATV DVWK ATV DVWK	A 139E A 127	Installation and Testing of Drains and Sewers  Static Calculation of Drains and Sewers							$\rightarrow$	$\dashv$
		Static Calculation of Drains in landfills				_			-	_
ATV	M 127-1	(Translation from German into English on request)								
ATV	M 127-2	Part 2 Static Calculation for the Rehabilitation of Drains and								
AIV	IVI 127-2	Sewers Using Lining and Assembly Procedures								_
		Inspection, Repair, Rehabilitation and Replacement of Sewers and Drains,								
ATV	M143-6	Part 6: Leak Testing of Existing, Earth Covered Sewers								
		and Drains and Shafts Using Water, Air Overpressure and Vacuum								
DVS	2203	Testing of welded joints of thermoplastic sheets and pipes								
DVS	2203-1	Part 1: Test methods – Requirements								
DVS	2203-2	Part 2: Tensile Test								
DVS	2203-4	Part 4: Tensile creep test								
OVS	2203-5	Part 5: Technological Bend test								
DVS	2203-6	Part 6: Shear and Peeling test								
DVS	2205-1	Part 1: Design calculations for tanks and apparatus made from thermoplastics								
DVS	2205-2	Part 2: Calculation of tanks and apparatus made of thermoplastics –								
DV3	2203-2	Vertival round, non-pressurised tanks						-		
DVS	2205-3	Part 3: Design of thermoplastic tanks and apparatuses – welded joints								
DVS	2207-1	Part 1: Welding of thermoplastics – Heated tool welding of								
	- Protestin	pipes, pipeline components and sheets made of PE-HD  Part 3: Welding of thermoplastics – Hot-gas string-bead								
		welding and hot-gas welding with torch separate from filler								
DVS	2207-3	rod of pipes, pipe components and sheets – Methods,								
		Requirements								
DIVE	2207.4	Part 4: Welding of thermoplastics – Extrusion welding of								
DVS	2207-4	pipes, piping parts and panels – Processes and Requirements								
DVS	2207-11	Part11: Welding of thermoplastics – Heated tool welding of								
	2501-11	pipes, pipeline components and sheets made of PP								
DVS	2208-1	Part 1: Welding of thermoplastics – Machines and devices								
	1	for heated tool welding of pipes, piping parts and panels	$\vdash$							
	11	Industrial piping made of thermoplastics - Design and execution - Above- ground pipe systems - Recommendations for the internal pressure and leak								- 1
DVS	2210-1									

Institution	No.	Title / Description	Gener	Polyper	Polype	Raw No.	Pipe Survey Propertie	/ ,	Manhole	Jointing	//
DVS	2210-2	Industrial piping made of thermoplastics - Design and execution - Below- ground pipe systems									
DVS	2212	Qualification testing of plastic welders									

Compilation done by: Plaspitec GmbH, Maybachstr.22, 50670 Cologne, Germany