



मुख्य अभियंता, पुणे प्रादेशिक विभाग पुणे,

नवीन प्रशासकीय इमारत, पुणे लष्कर पा.पु. केंद्र आवार,
४६३ स्टेव्हली रोड, सेंट मेरी चर्च शेजारी, कॅंप, पुणे-४११००१

दूरध्वनी : कार्यालयीन ०२०-२९७०६०६४/२९७०६०६८

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जा.क्र./ मु.अ.(पुणे)/चिशा/ दरसुची २०२१-२२/शुध्दीपत्रक/२०५४

दि.१२/ ११/२०२१

शुध्दीपत्रक क्र ४

विषय:- मजीप्राच्या सन २०२१-२२ च्या दरसुची मध्ये Supply and installation of prefabricated ground water storage bolted tanks चा समावेश करण्याबाबत

संदर्भ:- १) मा.सदस्य सचिव,मजीप्रा, मुंबई यांचे पत्र क्र.मजीप्रा/मनिसंस-ता/४०० दि.०६/०९/२०२१
२)अधीक्षक अभियंता(मु),मजीप्रा, मुंबई यांचे पत्र क्र.मजीप्रा/सस/तांशा ३/१३०६ दि.०३/११/२०२१

- १) मजीप्राची पुणे प्रादेशिक विभागाची सन २०२१-२२ ची दरसुची दि.१५/०६/२०२१ पासून लागू करण्यात आली आहे. सदर दरसुचीमध्ये O-PVC पाईप्सचा समावेश करण्यात आलेला आहे. परंतु सदर दरसुचीमध्ये O-PVC पाईप संबंधी Reception, storage, installation and Test instruction संबंधी IS १६६४७-२०१७, ISO-१६६४२२०१४ नुसार प्रपत्रे समाविष्ट नाहीत.सदर प्रपत्रे चा समावेश चालू दरसुचीमध्ये करण्या बाबत संदर्भीय पत्र क्र १ अन्वये सुचना प्राप्त झालेल्या आहेत. या नुसार सन २०२१-२२ च्या दरसुचीमध्ये सोबत जोडलेल्या प्रपत्राचा समावेश करण्यात येत आहे.
- २) मजीप्रा पुणे प्रादेशिक विभागाची सन २०२१-२२ ची दरसुची दि.१५/०६/२०२१ पासून लागू करण्यात आली आहे. सदर दरसुचीमध्ये शुध्दीपत्रक क्र.१ अन्वये Supply and installation of prefabricated ground water storage bolted tanks चा समावेश करण्यात आलेला आहे. सदर बाबीचे दर हे जीएसटी शिवाय असल्याने शुध्दीपत्रक १ मधील सदर बाबीच्या वर्णनातील पहील्या परिच्छेदात सुधारणा करण्या बाबत संदर्भीय पत्रान्वये सुचना प्राप्त झालेल्या आहेत.

या नुसार सन २०२१-२२ च्या दरसुचीमध्ये O-PVC पाईप संबंधी प्रपत्रे चा समावेश करणे व वरील क्र.२ मधील बाबीच्या वर्णनातील पहील्या परिच्छेदात सुधारणा करण्याचे शुध्दीपत्रक खालीलप्रमाणे आहे.

Section H(Miscellaneous)

Sr. no	शुध्दीपत्रक क्र.३ दि.०१/१०/२०२१ नुसार	असे वाचावे
1	Discription	Discription
	Supply and installation of prefabricated ground water storage bolted tanks, a complete package in knockdown, ready to assemble construction consisting of outer wall surface mad out of special grade hot dip aluminum – Zink alloy, metallic factory coated steel confirming to IS-15961-2012 minimum thickness of 0.6 mm = The inner surface should be provided with liners of minimum 0.6 mm thickness of reinforce polyethylene or polypropylene or metallocene material suitable for drinking water purpose. Top cover shall be of polyethene tape monophylament yarn or woven polypropylene or corrugated G.I. Sheets Rate include cost of inlet, outlet, overflow Pipes up to 5 m from periphery of tank including ball valves of standard quality , aluminum ladder, level indicator, water tightness test, transportation up to site of work and all taxes etc complete.	Supply and installation of prefabricated ground water storage bolted tanks, a complete package in knockdown, ready to assemble construction consisting of outer wall surface mad out of special grade hot dip aluminum – Zink alloy, metallic factory coated steel confirming to IS-15961-2012 minimum thickness of 0.6 mm = The inner surface should be provided with liners of minimum 0.6 mm thickness of reinforce polyethylene or polypropylene or metallocene material suitable for drinking water purpose. Top cover shall be of polyethene tape monophylament yarn or woven polypropylene or corrugated G.I. Sheets Rate include cost of inlet, outlet, overflow Pipes up to 5 m from periphery of tank including ball valves of standard quality , aluminum ladder, level indicator, water tightness test, transportation up to site of work excluding GST levied by GOI & GOM in all respect etc.complete.
2	सन २०२१-२२ च्या दरसुचीमध्ये O-PVC पाईप संबधी Reception, storage, installation and Test instruction संबधी IS १६६४७-२०१७, ISO-१६६४२२०१४ नुसार सोबत जोडलेल्या प्रपत्राचा समावेश करण्यात येत आहे.	

सोबत: क्र २ नुसार O-PVC पाईप संबधी प्रपत्रे

२१/०५/२३ १२.११.२०२३
(रा.सा.राहाणे)

अध्यक्ष ,दरसुची समिती

तथा मुख्य अभियंता

मजीप्रा प्रादेशिक विभाग, पुणे

प्रत: मा. सदस्य सचिव, मजीप्रा ,मुंबई यांना माहीती करिता सविनय सादर

प्रत:-मुख्य अभियंता, मजीप्रा , प्रादेशिक विभाग ठाणे/नाशिक/ औरंगाबाद/ अमरावती/ नागपुर यांना माहीती करिता अग्रषित

प्रत:- अधीक्षक अभियंता मजीप्रा (मुख्यालय) / अधीक्षक अभियंता मध्यवर्ती नियोजन व सनियंत्रण कक्ष , मजीप्रा मुंबई यांना माहीतीस्तव

प्रत:- उप अभियंता, अद्यावत तंत्रज्ञान कक्ष, मजीप्रा, मुंबई यांना माहीतीसाठी व मजीप्राच्या संकेतस्थळावर upload करण्यासाठी

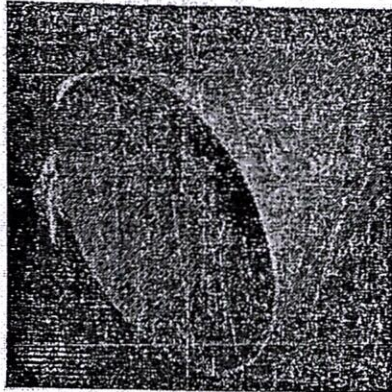
Item No 3 : ORIENTED PVC PIPE (O-PVC)
RECEPTION, STORAGE, INSTALLATION AND TEST INSTRUCTIONS
IS 15547-201, ISO 15442-2014

RECEPTION

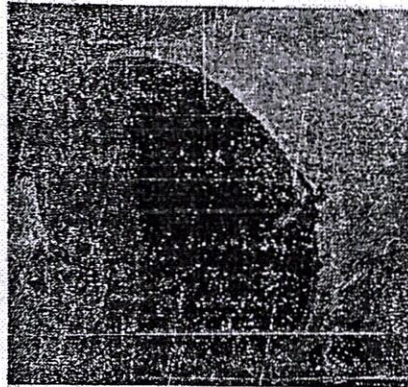
After the reception of the pipes, it is necessary to check their state. Before its installation, you should remove the caps and make a sampling to verify that all the pipes are correct.

Checking the next points is particularly important:

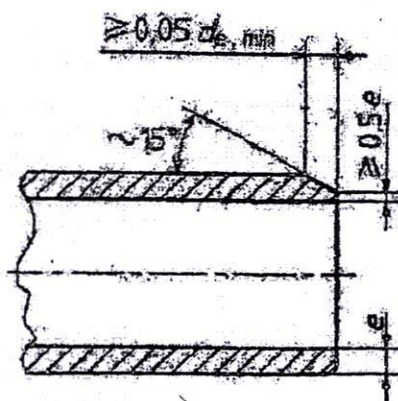
- The pipes should be free of dirt.
- The chamfer in the spigot end should not be damaged.



CORRECT



INCORRECT



Technical Sheet - Installation instructions



REALIZATION OF THE TRENCH

The trench must be free of stones at the bottom and at the sides.
Stones smaller than 10-20 mm are allowed, but they cannot be the main size of the ground particles.

Minimum trench width:

DN (mm)	Minimum width of trench B(m)	Depth of trench H(m)	Minimum width of trench B(m)
90-250	0.60	$h < 1.00$	0.60
315	0.85	$1.00 < h < 1.75$	0.80
355	1.00	$1.75 < h < 4.00$	0.90
400	1.10	$H > 4.00$	1.00
450	1.15		
500	1.20		
630	1.35		
800	1.65		

As a rule of thumb, when there is no road traffic involved, the pipes' crown will be at a minimum depth of 0.6 meters; with road traffic, the minimum depth is 1 meter.

BEDDING AND FILLING THE TRENCH

Pipe must be installed in the following circumstances:

1. Before placing the pipe, a sand bed should be prepared (a fine granular material could be used instead of sand) with a thickness from 10 cm to 15 cm. The pipe should be well aligned and levelled.
2. The pipe must lie on the sand bed. It must be ensured that all the lower part of the pipe is settled on the sand bed trying to soak as much as possible in order to make the angle of sand that supports the kidneys of the pipe as big as possible.
3. Once the pipe is placed, chamberlain sides must be filled with the selected material and compacted to achieve >95% Proctor Normal.
4. The trench must be filled with the selected material and compacted laterally until the upper part of the pipe is buried at least 30 cm.
5. Steps 3 and 4 can be done with the same natural material obtained from the excavation, trying to avoid rocks and large stones, and checking that this natural material can support the forces produced by the pressure inside of the pipe.

Technical Sheet - Installation Instructions



ASSEMBLY

- Remove the protection caps.
- Verify that the pipe is clean and in good condition. Paying attention to the sockets and spigot ends. Check that the chamfer is correct and free of cracks.
- Verify that the seal is in its place, clean and free of foreign materials (stones, sand, etc.).
- Lubricate the chamfer of the spigot and the seal with joint lubricant.
- Line up the pipe as much as possible horizontal and vertically.
- Insert only the chamfer edge of the socket, just to support the pipe but leaving the socket lip free.
- In the case of pipes with nominal diameter ≤ 250 mm, a firm and dry push should be given to seize the momentum produced by the free movement in the lip of the socket and introduce it until the mark is hidden into the socket.
- When installing diameters > 250 mm, one should use mechanical means to introduce the pipe using materials such as wood, hoists, tackles or slings.



In the next table, you can find an approximated number of assemblies per diameter with 1kg of lubricant.

DN (mm)	90	110	140	160	200	225	250	315	355	400	450	500	630	800
Assemblies	87	76	54	46	34	32	30	25	21	17	16	14	12	9

PIPE CUTTING

Pipes can be cut transversally using a circular saw or a hacksaw. The resulting male cut ends should be chamfered in order to be entered manually in another socket pipe or fitting. The chamfer can be made with a circular saw and be reviewed later with a file. The chamfer should be approximately of 15°.

A mask must be worn to prevent dust inhalation and protections and safety measures must to be taken for cutting machines.

Pipes chamfered on-site are less accurate than those made at the factory. Because of that, they could require higher introduction efforts or even require simple mechanical means to place the spigot inside the socket.

Technical Sheet - Installation instructions



ANGULAR DEVIATION ALLOWED IN THE SOCKET

In addition to the curvature of the pipe, an angular deviation is allowed at the junction between pipes. Therefore in the final layout of the pipes, one can add both effects.

It is important not to exceed the established values of angular deviation in the socket-end when bending the pipe.



(1) Total length of the pipe: 5.95 meters.

DN	Maximum angular deviation	Displacement in the socket (D)
mm	angle (°)	D(mm) ⁽¹⁾
90-800	2°	200

The pipe connections can be subject to greater angular deviations if subjected to high stresses. It's recommended not to exceed those limits in order to avoid endangering the safety coefficients of the assembly under pressure.

FORCES PRODUCED BY THE BENDING OF THE PIPE

The bent pipeline behaves like a narrow-angle curve; this means that there is some backpressure on the ground as the table below shows. These cross-pressures, under normal conditions, can be supported by a sufficiently compacted soil, otherwise, if necessary, they should be supported with anchors in excessive curvatures.

Forces in a curved pipe ($\alpha / 2$) ⁽²⁾

	bar	bar	bar	bar	bar	bar
DN	1	5	10	15	20	25
mm	kN	kN	kN	kN	kN	kN
90	0,10	0,51	1,02	1,53	2,04	2,55
110	0,12	0,62	1,25	1,87	2,49	3,12
140	0,16	0,79	1,58	2,37	3,17	3,96
160	0,18	0,90	1,81	2,71	3,61	4,51
200	0,22	1,12	2,25	3,37	4,50	5,62
225	0,25	1,26	2,52	3,78	5,04	6,29
250	0,28	1,39	2,79	4,18	5,58	6,97
315	0,35	1,74	3,48	5,22	6,96	8,70
355	0,39	1,96	3,91	5,87	7,82	9,78
400	0,44	2,19	4,38	6,57	8,76	10,96
450	0,49	2,46	4,91	7,37	9,82	12,28
500	0,55	2,74	5,48	8,22	10,96	13,69
630	0,68	3,42	6,84	10,26	13,68	17,10
800	0,85	4,26	8,51	12,77	17,03	21,28

(2) Resultant forces in a pipe 5.95 meters long.



PIPE OVERLAP

Pipes are of standard length of 6.00 m length, but during laying the following overlaps have to be considered for net reduction in standard pipe length. The standard overlaps are defined in the next table and may be considered for estimating actual pipe lengths as below:

DN (mm)	110	160	200	250	315	400	450	500	560	630
Overlap %	2.92	3.35	3.75	4.50	5.42	6.25	6.4	6.5	7.15	7.75

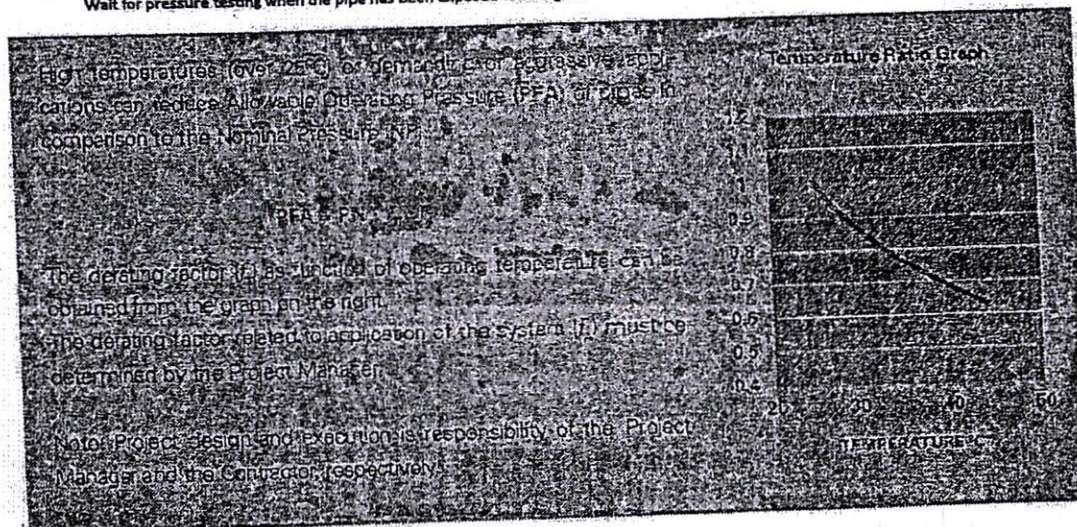
EFFECT OF TEMPERATURE

When the temperature is high, plastic pipes undergo a loss of mechanical properties and we must take this into account. Because of that, we must avoid the following conditions during pressure tests:

- Pipe partially or fully exposed to weathering (line uncovered).
- High outside temperature.
- Standing water inside the pipe.
- Prolonged sun exposure prior to the test.

All these circumstances may increase the temperature of the pipe above its operating temperature, so the overpressure test can damage the pipeline. In order to avoid that, it is recommended to:

- Cover the pipe once the tightness of the network is verified.
- Wait for pressure testing when the pipe has been exposed to sunlight.



Technical Sheet - Installation instructions

