

TECHNICAL STANDARD**PACKING SAND**
(Pipe embedment and trench fill sand)

Issued by: Manager Engineering

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APPROVAL TO DEVIATE FROM THIS STANDARD

Approval may be granted by the Asset Owner to deviate from the requirements as stipulated in this Standard if the functional requirements (e.g. Asset Life) for the asset differs from those stated in the Standard, but is assessed as still being acceptable by the Asset Owner's nominated representative.

Any approval to deviate from the stated requirements of this Standard will not be seen as creating a precedent for future like project. Any request to deviate from this Standard must be carried out on a project by project basis where each alternate proposal will be individually assessed on its own merit.

MAJOR CHANGES INCORPORATED IN THE AUGUST 2010 EDITION

The following lists the major changes to the August 2010 edition of TS 4:

1. Amendment to Particle Size Distribution Test in Table 1.1 - Essential Criteria.
2. Referenced Documents SAW.SC.01 changed from Natural Resource Management Act 2004 with Amendments to Determination of the pH Value of a Soil – Colorimetric Method.

The following lists the major changes to the January 2007 edition of TS 4:

1. Referenced Documents SAW.SC.01 (ref page 3 of 5) changed from Animal and Plant Control Act to Natural Resource Management Act 2004 with Amendments.

The following lists the major changes to the July 2004 edition of TS 4:

2. Reformatted from DS to TS (Departmental Standard to Technical Standard), and updated referenced Australian Standards.
3. Conversion to a technical standard by removal of contractual conditions (to be included in the contract that references this standard).

CONTENTS

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APPROVAL TO DEVIATE FROM THIS STANDARD 2

MAJOR CHANGES INCORPORATED IN THE JANUARY 2007 EDITION 2

CONTENTS 4

TABLES & FIGURES..... 4

REFERENCED DOCUMENTS 4

SECTION 1: QUALITY OF MATERIAL..... 5

SECTION 2: SA WATER’S REPRESENTATIVE 6

SECTION 3: SAMPLES 6

SECTION 4: TESTING..... 6

SECTION 5: REJECTION..... 6

TABLES & FIGURES

Table 1.1 Essential Criteria 5

REFERENCED DOCUMENTS

- AS 1141:** Methods for sampling and testing aggregates
- AS 1289:** Methods of testing soils for engineering purposes
- SAW.SC.01** Determination of the pH Value of a Soil – Colorimetric Method

SECTION 1: QUALITY OF MATERIAL

The characteristics required of pipe embedment sand are that:

- (a) It will compact easily enough that the required density can be achieved all around the pipe without damaging or displacing the pipe – despite the restricted access normally encountered in a pipe trench;
- (b) That it will not mechanically damage the pipes or fittings or their protective coatings during placement or compaction; and
- (c) That it will not be corrosive to the pipes or fittings.

The sand shall be obtained from pits or sand dunes.

To the satisfaction of SA Water's Representative, the sand shall be free from:

- Cohesive and organic lumps
- Rocks or other sharp particles likely to damage pipes or protective coatings
- Dangerous and noxious weeds or their seeds as proclaimed in South Australia by regulations under the Animal and Plant Control Act with amendments.

The sand shall comply with the criteria detailed in Table 1.1 of this Technical Standard.

Table 1.1 Essential Criteria

Test	Description	Specification	Procedure
Particle Size Distribution	Sieve Size (mm)	Percent Passing	AS 1141.11 (Including Clause 5.6 – Washing using dispersing agent)
	9.5	100	
	6.7	95 – 100	
	4.75	90 – 100	
	2.36	75 – 100	
	1.18	40 – 100	
	0.600	20 – 100	
	0.300	10 – 95	
	0.150	0 – 55	
0.075	0 – 10		
Resistivity	(ohm metre)	≥ 50	AS 1289.4.4.1
pH	–	≥ 5.0	SAW.SC.01 (Same as superseded AS 1289.D3.2)
Plasticity Index	(%)	Non Plastic	AS 1289.3.3.1

Note: The criteria in Table 1.1 do not always guarantee sand that will compact easily enough for use as pipe embedment sand. For example, sands that contain carbonate fines (lime) or that are unusually well-graded may be difficult to compact if their moisture content is even slightly above optimum and/or such sands may not drain well once wetted.

SECTION 2: SA WATER'S REPRESENTATIVE

SA Water's Representative in this Technical Standard will be nominated by SA Water.

SECTION 3: SAMPLES

When requested by the SA Water's Representative, a 25 kg sample of packing sand shall be submitted and sent for testing to a laboratory nominated by the SA Water's Representative.

Each sample shall be clearly marked with the following information:

- (1) Technical Standard TS 4
- (2) Type of Material
- (3) Contract Number
- (4) Name of Contractor
- (5) Origin of Supply

The initial sample of material submitted will be retained for reference throughout duration of works.

SECTION 4: TESTING

When requested by SA Water's Representative, test results shall be supplied to prove compliance with the criteria detailed in Table 1.1.

Testing shall be carried out by a NATA registered laboratory or a laboratory approved by SA Water's Representative. All relevant test certificates shall be submitted to SA Water's Representative immediately they become available.

SA Water's Representative reserves the right to carry out independent audit testing. The costs of such audit testing shall be borne by SA Water, except for all audit tests that indicate failure to meet the specified criteria, in which case the costs shall be borne by the Supplier.

SECTION 5: REJECTION

Any material that is not of the required quality of grading, or is in any other way not in accordance with this Technical Standard or has a moisture content greater than 8 percent will be rejected.

No payment will be made for rejected materials.