



WELL STIMULATION SERVICES
Chandkheda Campus, Sabarmati, Ahmedabad – 380005
Phone: +91-79-23296683, 23290445, +91-2764 220264, 223462

Date: 20.01.2026

NOTICE INVITING EXPRESSION OF INTEREST (EOI)

FOR

Low Strength Proppant 40/70 Mesh (LSP 40/70), Type-III for Well Stimulation Services (WSS), Ahmedabad

1. INTRODUCTION

Oil & Natural Gas Corporation Limited (ONGC) is the flagship integrated energy company of India, with interests across the entire hydrocarbon value chain in upstream, midstream, and downstream sectors. ONGC was formed on August 14, 1956, by the Government of India as the Oil & Natural Gas Commission, with the objective of ensuring India's energy security, and was incorporated on June 23, 1994, as Oil and Natural Gas Corporation Limited ("ONGC"), a company incorporated under the Companies Act of India, having its registered office at Pandit Deendayal Upadhyaya Urja Bhawan, 5, Nelson Mandela Marg, Vasant Kunj, New Delhi – 110070, India. ONGC was awarded the 'Maharatna' status in the year 2010 for its consistently impressive performance in the oil and gas sector and strong financial fundamentals. ONGC is the largest Public Sector Undertaking and the highest dividend-paying company in the country. Additionally, ONGC is engaged in the production and marketing of value-added petroleum products, refining, and downstream activities.

2. BRIEF OF EOI

Well Stimulation Services (WSS), Ahmedabad functions as a specialized operational unit entrusted with execution of well stimulation activities such as hydraulic fracturing, acidization and allied services for improving well performance. The unit supports various ONGC producing assets by ensuring timely and efficient stimulation operations.



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Well Stimulation Services (WSS), Ahmedabad intends to procure Low Strength Proppant 40/70 Mesh (LSP 40/70), Type-III as per ONGC Corporate Specification for hydraulic fracturing jobs planned in Ahmedabad, Mehsana and Cambay Assets from indigenous manufacturers/suppliers.

3. SCOPE OF SUPPLY

Under the proposed EOI for Low Strength proppant 40/70 Mesh (LSP 40/70), Type-III, hereinafter referred to as the “subject item”, interested parties may be required to:

- a) Confirm that they are a domestic manufacturer or authorized supplier of the subject item, with supporting documents. In case of authorized suppliers, a valid Manufacturer’s Authorization Letter on the manufacturer’s official letterhead, along with supporting documents, shall be submitted.
- b) Confirm that they can provide the subject item meeting the indicated technical specification published with the EOI.
- c) Confirm their manufacturing capacity or supply capability for the subject item. If possible, indicate expected lead time for supply of 480 MT of subject item.

4. SUBMISSION OF EXPRESSION OF INTEREST

Interested indigenous manufacturers / suppliers may submit their EOI through email to WSS Ahmedabad with the following documents:

- a) Letter of interest on the vendor’s company letterhead.
- b) Details of the company and experience in manufacturing/supplying of same or similar items to operators in India or abroad.



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- c) Confirmation of all requirements mentioned under **Point No. 3 on “Scope of Supply”**
- d) Any other information / suggestions/ deviations, if any, from technical specification as detailed in EOI, performance requirement, quality standards relevant to supply of the material. Such deviation shall be explicitly highlighted.
- e) **Last date for submission of EOI: 16.02.2026**

5. CONTACT DETAIL

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DISCLAIMERS:

- (i) This Expression of Interest (EOI) is issued solely for the purpose of market assessment, identification of prospective domestic manufacturers / suppliers, and refinement of technical specifications, if any and procurement strategy. This EOI does not constitute a tender, request for proposal or invitation to bid and shall not be construed as a commitment by ONGC to procure any material or services. Participation in this EOI shall not create any legal, commercial, or contractual obligations between ONGC and the EOI participants.



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- (ii) ONGC reserves the right, at its sole discretion, to cancel, amend, modify, or withdraw this EOI at any stage, without assigning any reason whatsoever and without occurring any liability to the participants
- (iii) Material to be supplied at ONGC designated supply base / WSS Ahmedabad location.

Attachments:

- a. ONGC Corporate Specification of Low Strength proppant 40/70 Mesh (LSP 40/70), Type-III.
- b. Testing Procedure of Low Strength proppant 40/70 Mesh (LSP 40/70), Type-III.

CHEMICAL NAME	LOW STRENGTH PROPPANT (TYPE – I, II AND III)
SPECIFICATION No.	ONGC / WS / 27 / 2015
TEST PROCEDURE	ONGC/ Test Procedure Vol-III / WS / 27
MATERIAL CODE	090001039 (Type I) 100101589 (Type II) 100000281 (Type III)

1. Physical State : *The material shall be in the form of single grains.*

	Type-I	Type-II	Type-III
Sieve Analysis:Size Designation :	ASTM No. 12 / 20 or equivalent	ASTM No. 20 / 40 or equivalent	ASTM No. 40 / 70 or equivalent
2. Fraction retained between the : designated sieves sizes, percent by mass	90.0 (Minimum)	90.0 (Minimum)	90.0 (Minimum)
3. Fraction retained on ASTM No. 8 or : equivalent sieve, percent by mass	0.1 (Maximum)	-	-
4. Fraction retained on ASTM No. 16 or : equivalent sieve, percent by mass	-	0.1 (Maximum)	-
5. Fraction retained on ASTM No. 30 or : equivalent sieve, percent by mass	-	-	0.1 (Maximum)
6. Fraction passing through ASTM No. : 30 or equivalent sieve, percent by mass	1.0 (Maximum)	-	-
7. Fraction passing through ASTM No. : 50 or equivalent sieve, percent by mass	-	1.0 (Maximum)	-
8. Fraction passing through ASTM No. : 100 or equivalent sieve, percent by mass	-	-	1.0 (Maximum)

(contd.)

	Type -I	Type-II	Type – III
9. Sand Grain Clusters, <i>percent by count</i> :	< 1	< 1	< 1
10. Krumbein Sphericity :	0.6 (Minimum)	0.6 (Minimum)	0.6 (Minimum)
11. Krumbein Roundness :	0.6 (Minimum)	0.6 (Minimum)	0.6 (Minimum)
12. Acid solubility in 12% (w/w) HCl + 3% (w/w) HF on dry basis, <i>percent by mass</i> :	2.0 (Maximum)	2.0 (Maximum)	3.0 (Maximum)
13. Turbidity on dry basis, <i>NTU</i> :	250 (Maximum)	250 (Maximum)	250 (Maximum)
14. Crush resistance at 3000 <i>psi</i> fines, <i>percent by mass</i> :	16 (Maximum)	-	-
15. Crush resistance at 4000 <i>psi</i> fines, <i>percent by mass</i> :	-	14 (Maximum)	-
16. Crush resistance at 5000 <i>psi</i> fines, <i>percent by mass</i> :	-	-	8 (Maximum)
17. Clay and soft particle content, <i>percent by volume</i> :	1 (Maximum)	1 (Maximum)	1 (Maximum)

Low Strength Proppant (Type I, II & III) (ONGC / WS / 27 / 2015)



Procedure:

1. Physical State: Visual

2. Sieve Analysis

1. Stack pre-cleaned ASTM sieves and pan accurately weighed using top loading balance to the nearest 0.01 gm in a nest of decreasing sieve opening sizes from top to bottom. (Refer Table below for selection of ASTM sieves number for designated sizes of the proppant under evaluation).
2. Weigh exactly 100 gm of the representative sample to the nearest 0.01gm.
3. Pour the sample on the top sieve and place the recommended sieves and pan in a Rotap sieve shaker and operate it for ten minutes.
4. Remove and weigh each sieve accurately to the nearest 0.01gm.
5. Establish weight of proppant retained on each of the six sieves and on the pan.
6. Calculate percent by mass of proppant retained each sieve.
7. The cumulative weight should be within 0.5% of the sample weight (100 gm) used in test, if not, the sieve analysis must be repeated using the representative sample from the remaining part of the material.

Table

Proppant size designation	12/20 (For Type-I)	20/40 (For Type-II)	40/70 (For Type-III)
Nest of ASTM sieves recommended for testing	8	16	30
	12	20	40
	14	25	45
	16	30	50
	18	35	60
	20	40	70
	30	50	100
	Pan	Pan	Pan

3. Sand Grain Clusters, % By Count

1. With the help of microscope at 10x to 20x magnification, observe 300-500 proppant grains of representative sample.
2. Find out the presence of clusters, and calculate, percent by count.

4. Krumbein Sphericity

1. Randomly select 20 or more grains of the representative sample of proppant.
2. View the sphericity of the grain through microscope at 10x to 20x magnification by turning each grain in all possible direction with the help of microneedle.
3. Record the sphericity values by comparing with standard chart developed by Krumbein & Sloss (1963).
4. Report the average value of the sphericity of 20 or more grains.

5. Krumbein Roundness

1. View the roundness of the same grains of which sphericity has been determined through microscope at 10x to 20x magnification.
2. Record the roundness value by comparing with standard chart developed by Krumbein & Sloss (1963) adopting same technique as in the case of sphericity measurements, record the average value.

6. Acid solubility in 12% (w/w) HCl +3% (w/w) HF, on dry basis, % by mass (As per ISO: 13503-2)

1. Purpose

The acid solubility procedures are used to determine the suitability of a proppants for use in applications where the proppant can come into contact with acids.

2. Description

The preferred method of testing acid solubility is using a solution of 12:3 HCl:HF acid (i.e. 12% by mass of HCL and 3% by mass of HF; see 6.4.2).

The solubility of a proppant in 12:3 HCl: HF is an indication of the amount of soluble materials (i.e. carbonates, feldspars, iron oxides, clays etc) present in the proppant.

3.0 Equipment and materials

3.1 Hydrochloric acid, HCl concentrated (35%) reagent grade of known concentration

3.2 Ammonium bifluoride, (NH₄F₂), reagent grade.

3.3 Balance, 0.001 gram accuracy

3.4 Water bath, 66°C (150°F)

3.5 Oven, 105°C (221°F)

- 3.6 Beaker, 150ml to 200 ml capacity, high-density polypropylene
 - 3.7 Graduated cylinder or volumetric flask, 1000ml, high-density polyethylene or polypropylene.
 - 3.8 Analytical filtering apparatus, acid resistant (porcelain, high-density polyethylene or polysulfone) using a vacuum-filtering technique with Buchner-style filtering Funnel.
 - 3.9 Filter paper circles, cellulose-based, acid resistant sufficient to prevent loss of the sample. (Acid resistant Whatman No. 42 filter papers may be used)
 - 3.10 Asbestos for Buchner Funnel
 - 3.11 Timer, accurate to ± 5 s.
 - 3.12 Desiccator.
- 4.0 Procedure
- 4.1 General
- Representative samples shall be taken from the sample splitter; do not sieve the sample. Samples should not be subjected to crush-resistance test or ground prior to the acid-solubility analysis, but rather the analysis shall be performed on the unaltered proppant.
- 4.2 Preparation of 12:3 HCl: HF acid solution**
- 4.2.1 Prepare a solution of 12:3 HCl:HF acid (specific gravity = 1.08 at 15.6°C(60 °F) as follows
 - 4.2.2 To 500 ml distilled water contained in a polyethylene or polypropylene 1000 ml graduated cylinder or volumetric flask, add 46.23 gram pure Ammonium bifluoride and dissolve. The actual mass of Ammonium bifluoride of less than 100% purity to be added is equal to 46.23 gram of ammonium bifluoride divided by the purity of Ammonium bifluoride, expressed as a mass fraction.
 - 4.2.3 Add 389.5 ml of 35% HCl (AR, specific gravity 1.18).
 - 4.2.4 Dilute to 1000 ml with distilled water.
 - 4.2.5 Stir to ensure complete mixing.
- 5.0 Solubility test
- 5.1 Weigh 5 gm of dried proppant to the nearest 0.0001 gm into a tared sample pan. The proppant should be dried at 105 ± 2 °C (221 °F) and cooled in a desiccator. Record mass, m_s
 - 5.2 Add the proppant sample to a 150 ml polyethylene beaker containing 100 ml of the acid solution prepared in 4.2. Cover the beaker with polyethylene watch glass. The acid and the samples should be at room temperature 24 ± 2 °C (75 ± 5 °F).

- 5.3 Place the beaker in water bath maintained at 66 °C (150 °F) for 30 minutes. Do not stir.
- 5.4 Dry the filter paper in an oven at 105 ±2 °C (221°F) for a minimum of 1 hour or until constant mass. Weigh and record the mass, m_F . The filter medium should not be weighed hot, but should be allowed to cool in a desiccator.
- 5.5 Arrange the filtering apparatus by placing a layer of asbestos in the Buchner funnel and place the filter paper over it. Transfer the sample and acid mixture from the beaker to the filtering apparatus. Filter the sample through the pre-weighed filter paper, being sure to transfer all particles from the beaker to the filter. Vacuum filtering techniques shall be used to remove the acid within 1 min.
- 5.6 Wash the sample and the filter paper in the filtering apparatus three times with 20 ml portions of distilled water.
- 5.7 Remove the filter paper along with the sample in a petri dish and keep it in an oven at 105 ± 2°C (221°F) for a minimum of 1 hour or until constant mass is obtained. Cool the filter paper along with the sample in a desiccator before weighing. Weigh the filter paper along with the sample and record its mass m_{FS} .
- 5.8 Calculate S, the acid solubility, expressed in percent, of the proppant using following equation and report the result.

$$S = \frac{(m_S + m_F - m_{FS}) \times 100}{m_S}$$

Where

m_S = mass of the sample in grams

m_F = mass of the filter paper in grams

m_{FS} = mass of the dried sample with filter paper

7. Turbidity, (on dry basis) NTU

1. Preparation of stock solution and standards.
 - a) Dissolve 1.0 gm of hydrazine Sulphate in distilled water and dilute to the mark in 100 ml volumetric flask.
 - b) Dissolve 10.0 gm of hexamethylene tetramine in distilled water and dilute to the mark in 100 ml volumetric flask.
 - c) Transfer 5ml of each solution prepared as in para 7(a) & (b) above to 100 ml volumetric flask, mix and allow to stand undisturbed for 24 hours at ambient temperature.

- d) Use distilled water to dilute the mixture as in para 7 (c) above to the mark in 100 ml flask and mix. The turbidity of this standard stock solution is 400 NTU.
 - e) The turbidity of a standard solution prepared by dilution of this stock suspension is proportional to the formazine concentration, for example, the turbidity of a standard solution prepared by diluting 50 ml of the 400 NTU stock suspensions to 100 ml is defined as 200 NTU.
 - f) Prepare different standard solution by dilution of the stock suspension.
 - g) The standard stock solution prepared in para 7 (d) above should be prepared monthly. Dilutions for standard solutions should be prepared fresh before test.
2. Place colourless, turbidity free distilled water in the sample compartment of turbidity meter and check the zero adjustment.
 3. Place different standard solutions prepared by linear dilution of stock solution in para 7 (1f) above one by one in sample compartment and note the direct turbidity from the instrument and calibrate the instrument.
 4. Measure 20 ml dry sand sample dried at $105 \pm 2^{\circ}\text{C}$; mix with 100 ml distilled water in a 250 ml conical flask. Allow to stand for 30 minutes.
 5. Shake vigorously by hand for approximately 45-60 shakes in 30 seconds (Do not shear in mechanical mixer). Allow to stand for 5 minutes.
 6. Using a syringe, extract 25 ml of water silt suspension from near the center of water volume.
 7. Place the water silt suspension in test vial and place in the turbidity meter previously calibrated. Note the reading. This is the turbidity of the sample in NTU.

8. Crush resistance, fines % by mass

Recommended load for different type Proppant

FOR 3" CELL:

1. TYPE-I: 3000 psi/9623 Kg force
2. TYPE-II: 4000 psi/12830 Kg force
3. TYPE-III: 5000 psi/16037 Kg force

FOR 2" CELL:

1. TYPE-I: 3000psi/4276Kg force
 2. TYPE-II 4000psi/5702kg force
 3. TYPE-III 5000 psi/7128 kg force
1. Determination of bulk density:
 - a) Using a top loading balance obtain accurate weight of empty brass cylinder of 100 ml capacity to the nearest 0.01 gm (W_1).

- b) Fill the above brass cylinder of 100 cc capacity, calibrated with water (id: 38.9 mm, height: 84.1± 0.4 mm & base thickness: 12.7± 0.4 mm) through S S funnel (outlet 34.9 mm) with sample to 100 ml mark by free fall (no tapping or vibration). Obtain accurate weight of the flask and sample to the nearest 0.01 gm (W₂). Calculate the bulk density.

$$\text{Bulk Density (D}_b\text{)} = \frac{W_2 - W_1}{100}$$

2. Calculate the weight of material needed to provide the concentration of 1.22 cm³/cm² in the test cell to the nearest 0.01 gm as follows.

$$PW = D_b \times \pi \times (r)^2 \times 1.22$$

P_w = Weight of sample in gm

D_b = Bulk density of the sample in gm/cm³

r = Inside radius of cell in cm

For 3" cell

$$PW = 55.6365 \times D_b$$

3. Prepare six sets of representative sample of around 100 gm each.
4. Stack two ASTM and pan with larger sieve size opening on top. Sieve size will be as follows.

Type-I 12 & 20
Type-II 20 & 40
Type-III 40 & 70

5. Pour sufficient quantity of the representative sample on the top sieve to provide in the test cell a concentration of 1.22 cm³/cm² of the mesh size specified for the sample being tested.
6. Place the sieve stack in a Rotap sieve shaker and sieve for ten minutes.
7. Discard all the sieved proppant sample except that remaining on the lower screen and preserve it.
8. Repeat steps as para 8 (4 to 6) above taking same quantity of representative sample.
9. Mix the sample remained on the lower screen at para 8 (6 & 7) above and divide in two equal parts.
10. Take one part of sieved proppant sample as in para 8 (9) above. Weigh exactly to the nearest whole number from the calculation as in para 8 (2) above.
11. Pour the sample into the cell, constantly moving the source of sample to keep the surface of the sample in the cell, as level as possible.

12. Level the surface of the proppant in the cell. This is done by inserting the piston in the cell and without applying any force, rotating the piston 180° in one direction only.
13. Without shaking or jarring the cell, place the cell containing the piston and sample in the press.
14. Apply the required load corresponding to the stress as mentioned in the specification prescribed for the type of proppant being tested. (Type-I 3000, Type-II 4000 & Type-III 5000 psi). Apply the required stress to the test-cell piston at the rate of 2000 psi/min until the final pressure is achieved. Hold the stress level for two minutes. If recommended load exceeds the test be aborted.
15. Reduce the load to zero and remove the cell from the press.
16. Clean and weigh the screen with smaller opening and pan.
17. Stack the sieve with smaller opening on the pan and transfer the cell contents on to the sieve using a small brush to assure transfer of the sample and all fines. Place the sieve and pan in Rotap sieve shaker and sieve for 10 minutes.
18. Weight the sieve and pan to the nearest 0.01 gm and calculate weight of fines generated. Let it be A gms.
19. Take second part of the sieved sample as in para 8 (9) above and weigh exactly equal to the quantity taken at para 8 (10) above. Clean and weigh the sieve with smaller opening and pan. Stack the sieve with smaller opening on the pan and pour sieved sample on the sieve. Place the sieve and pan in a Rotap sieve shaker and sieve for ten minutes.
20. Weigh the sieve and pan to the nearest 0.01 gm and calculate the weight of sample screened on pan. Let it be B gms.

$$\% \text{ fines} = \frac{(A-B) \times 100}{W}$$

W= Weight of sample taken at para 8 (10 or 19) above in gm.

A= Weight of the screened material at para 8 (18) above in gm.

B= Weight of the screened sample at para 8 (20) above in gm.

22. For each sample three crush resistance tests should be performed and the result be averaged.

9. Clay and Soft particle content, % by volume

1. The clay and soft particle content of frac sand shall be determined by washing 10 ml of frac sand sample in a total volume of 50 ml in distilled water.
2. Take 10 ml of the representative sample in 50 ml graduated centrifuge tube.

3. Wash by adding 10-15 ml of the distilled water and hand shaking the sand water mixture for 30 seconds.
4. The wash water should be carefully decanted into a second graduated centrifuge tube.
5. The sand sample washing procedure with 10-15 ml distilled water should be repeated until the total 50 ml of distilled water is consumed.
6. The 50 ml sample of collected wash water should be centrifuged for 10 minutes, using a centrifuge capable of operating at minimum 3000 ± 200 rpm.
7. The clay and soft particle content in the bottom of centrifuge tube should be noted and recorded.
8. One ml of sediment in centrifuge tube is equal to 10% clay and soft particle content, 0.5 ml is equal to 5% clay and soft particle content and so on.

