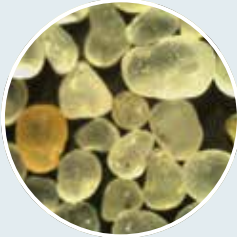
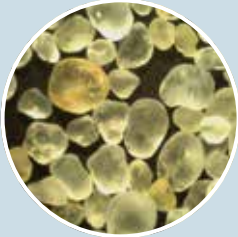
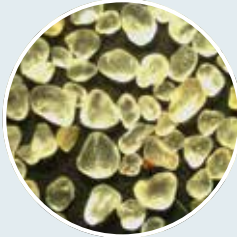

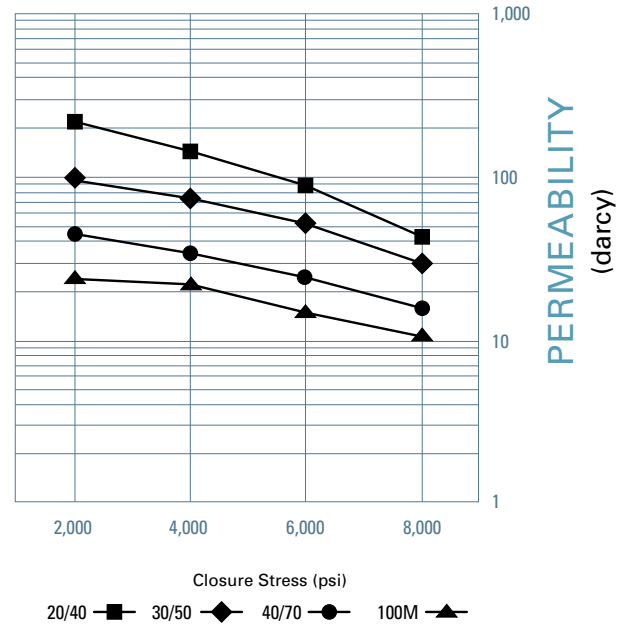
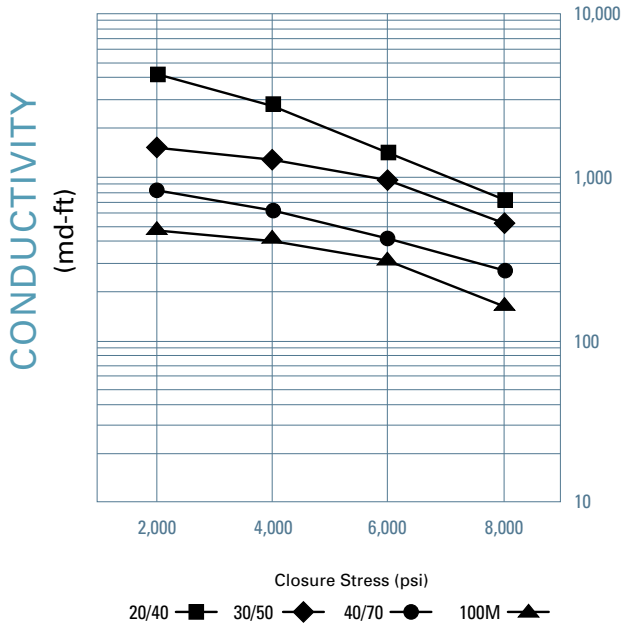


The Whitehall, Wisconsin operation is a unit-train capable facility with an annual capacity in excess of 2.8 million tons of premium Northern White frac sand. Sourced from a Cambrian period Wonewoc sandstone formation, Whitehall's natural proppants are geologically and texturally mature exhibiting exceptional purity, shape, strength and conductivity.

WHITEHALL FACILITY
 Established 2014
 2.86 MM TPY Capacity
 25,000 Ton Silo Storage
 Canadian National Railroad Origin

WHITEHALL PRIMARY FRAC GRADES

Typical Properties	20/40 Frac		30/50 Frac		40/70 Frac		100 Mesh	
								
13503-2/API RP 19C	-20+40		-30+50		-40+70		-50+140	
Sect. 6 "Sieve Analysis"	16	0.0	20	0.0	30	0.0	50	0.2
	20	3.2	30	0.1	40	3.6	70	42.6
	25	13.1	35	6.0	45	17.6	80	31.3
	30	23.6	40	29.4	50	30.9	100	14.8
	35	34.7	45	41.9	60	33.7	120	5.2
	40	20.3	50	18.7	70	11.2	140	3.2
	50	4.9	70	3.7	100	2.9	200	2.4
	Pan	0.2	Pan	0.2	Pan	0.1	Pan	0.3
Percent in Size (API/ISO Standard)	> 90%		> 90%		> 90%		> 90%	
Mean Diameter (d _{av})	0.587 mm		0.403 mm		0.310 mm		0.222 mm	
Median Diameter (d ₅₀)	0.568 mm		0.395 mm		0.303 mm		0.215 mm	
Sect. 7 "Shape"								
Roundness	0.8		0.8		0.7		0.7	
Sphericity	0.8		0.8		0.7		0.7	
Sect. 8 "Acid Solubility"								
12:3 HCl/HF @ 150° F	1.30%		1.26%		1.62%		2.20%	
Sect. 9 "Turbidity"								
NTU	< 50		< 50		< 50		< 70	
Sect. 10 "Proppant Density"								
Bulk (g/cm ³)	1.57		1.53		1.51		1.49	
Bulk (lb/ft ³)	97.22		95.80		94.21		93.18	
Apparent [Oil] (g/cm ³)	2.63		2.63		2.64		2.64	
Settling rate (ft/min)	56.84		27.58		16.16		6.75	
Sect. 11 "Crush Resistance"								
K Value	7K		8K		9K		11K	
	8.90% @ 7,000		9.58% @ 8,000		8.20% @ 9,000		9.25% @ 11,000	
	10.20% @ 8,000		10.93% @ 9,000		10.40% @ 10,000		10.27% @ 12,000	



PRELIMINARY LONG-TERM CONDUCTIVITY & PERMEABILITY

2% KCL Between Ohio Sandstone at 150° F for 50 Hrs Per Stress

Conductivity (md-ft)					Permeability (darcy)				
Stress (psi)	20/40	30/50	40/70	100 M	Stress (psi)	20/40	30/50	40/70	100 M
2,000	3,427	1,895	953	521	2,000	165	96	48	26
4,000	2,324	1,484	705	331	4,000	117	77	36	17
6,000	873	849	443	184	6,000	46	46	23	10
8,000	251	238	159	61	8,000	14	14	9	3
10,000	N/A	138	68	38	10,000	N/A	8	4	2

Disclosure: Material physical and performance properties are measured using recognized industry procedures and facilities. Average values may apply. Hi-Crush Partners LP and its affiliates make no warranty for their products, express or implied. We recommend you confirm all properties and suitability for use. All products are sold under Hi-Crush Partners LP and its affiliates applicable standard terms and conditions of sale.



Silica Sand Danger: This product has been classified following the Globally Harmonized System (GHS) of Classifying and Labeling Chemicals Criteria as a Category 1A Carcinogen, Category 1 Specific Target Organ Toxicity (following repeated exposures), and Category 2B Eye Irritant. For Industrial Use Only. Avoid creating dust when handling, using or storing product. Do not breathe dust. Prolonged exposure to dust may cause delayed lung injury (silicosis). Read Material Safety Data Sheet before using and follow OSHA or other applicable health and safety standards for crystalline silica/quartz.



REV. 1 (11/03/2014)

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