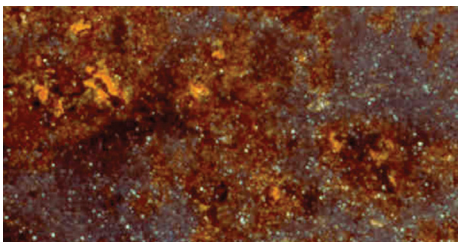
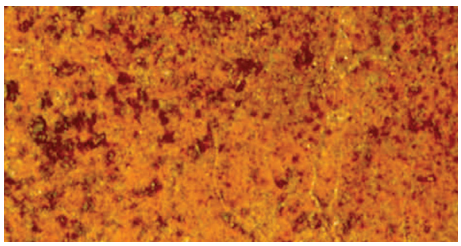
BURWELL

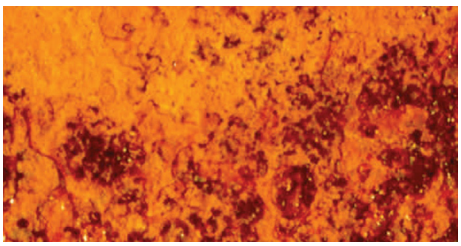
DEGREES OF CLEANLINESS OF BLAST-CLEANED SURFACES



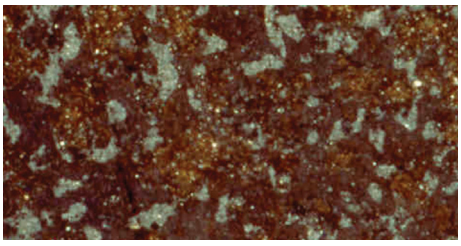
KEY: Steel where mill scale has started to flake and light rusting occurs.



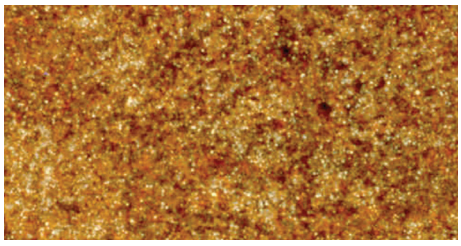
KEY: Steel where all mill scale has flaked off and complete rusting has occurred.



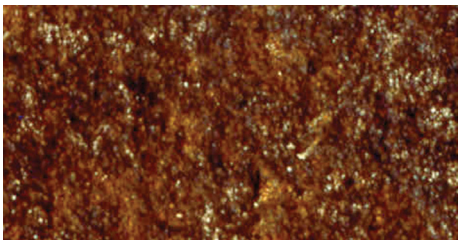
KEY: Steel where pitting and complete rusting has taken place.



BRUSH-OFF

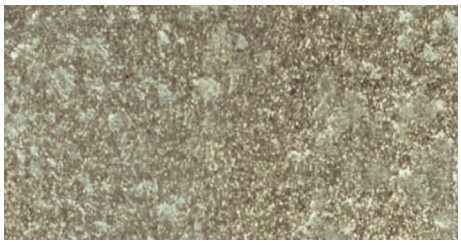


BRUSH-OFF

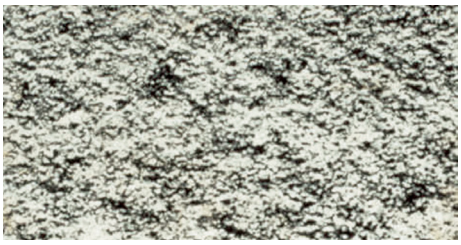


BRUSH-OFF

COMMERCIAL

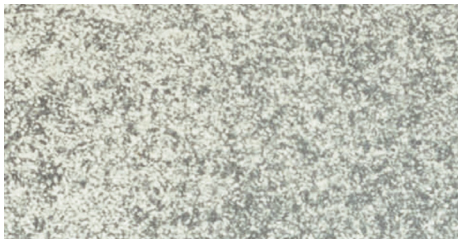


COMMERCIAL



COMMERCIAL

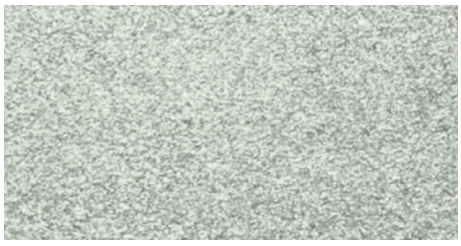
NEAR-WHITE METAL



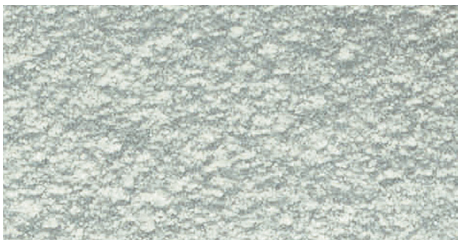
NEAR-WHITE METAL

NEAR-WHITE METAL

WHITE METAL



WHITE METAL



WHITE METAL

BRUSH-OFF	COMMERCIAL	NEAR-WHITE METAL	WHITE METAL
Tightly adherent mill scale and rust may remain on the surface. Mill scale and rust are considered adherent if they cannot be removed with a dull putty knife.	Evenly dispersed very light shadows, streaks and dis-colorations caused by stains of rust and mill scale may remain on no more that 33% of the surface.	Evenly dispersed very light shadows, streaks and dis-colorations caused by stains of rust and mill scale may remain on 5% of the surface.	Free of all visible oil, grease, dirt, dust, mill scale and rust.
SSPC-SP 7 **NACE No. 4** **SA-1**	**SSPC-SP 6** **NACE No. 3** **SA-2**	**SSPC-SP 10** **NACE No. 2** **SA-2-1/2**	**SSPC-SP 5** **NACE No. 1** **SA-3**

NOTE: Images shown are previously uncoated surfaces, viewed without magnification.

Compressed Air and Abrasive Consumption

Nozzle Orifice	PRESSURE AT THE NOZZLE (PSI)								Air (cfm) Abrasive Use Compressor HP
	50	60	70	80	90	100	125	140	
No. 2 (1/8")	11	13	15	17	18.5	20	25	28	Air (cfm)
	.67	.77	.88	1.01	1.12	1.23	1.52	1.70	Abrasive (cuft/hr.)
	67	77	88	101	112	123	152	170	Abrasive (lbs./hr.)
	2.5	3	3.5	4	4.5	5	5.5	6.2	Compressor hp
No. 3 (3/16")	26	30	33	38	41	45	55	62	Air (cfm)
	1.50	1.71	1.96	2.16	2.38	2.64	3.19	3.57	Abrasive (cuft/hr.)
	150	171	196	216	238	264	319	357	Abrasive (lbs./hr.)
	6	7	8	9	10	10	12	13	Compressor hp
No. 4 (1/4")	47	54	61	68	74	81	98	110	Air (cfm)
	2.68	3.12	3.54	4.08	4.48	4.94	6.08	6.81	Abrasive (cuft/hr.)
	268	312	354	408	448	494	608	681	Abrasive (lbs./hr.)
	11	12	14	16	17	18	22	25	Compressor hp
No. 5 (5/16")	77	89	101	113	126	137	168	188	Air (cfm)
	4.68	5.34	6.04	6.72	7.40	8.12	9.82	11.0	Abrasive (cuft/hr.)
	468	534	604	672	740	812	982	1100	Abrasive (lbs./hr.)
	18	20	23	26	28	31	37	41	Compressor hp
No. 6 (3/8")	108	126	143	161	173	196	237	265	Air (cfm)
	6.68	7.64	8.64	9.60	10.52	11.52	13.93	15.60	Abrasive (cuft/hr.)
	668	764	864	960	1052	1152	1393	1560	Abrasive (lbs./hr.)
	24	28	32	36	39	44	52	58	Compressor hp
No. 7 (7/16")	147	170	194	217	240	254	314	352	Air (cfm)
	8.96	10.32	11.76	13.12	14.48	15.84	19.31	21.63	Abrasive (cuft/hr.)
	896	1032	1176	1312	1448	1584	1931	2163	Abrasive (lbs./hr.)
	33	38	44	49	54	57	69	77	Compressor hp
No. 8 (1/2")	195	224	252	280	309	338	409	458	Air (cfm)
	11.60	13.36	15.12	16.80	18.56	20.24	24.59	27.54	Abrasive (cuft/hr.)
	1160	1336	1512	1680	1856	2024	2459	2754	Abrasive (lbs./hr.)
	44	50	56	63	69	75	90	101	Compressor hp

Pressure Loss in Air Hose

I.D.	Pressure Loss	Production Loss
3/4"	11.1 psi	16.6%
1"	2.4 psi	3.6%
1-1/4"	0.7 psi	1.0%
1-1/2"	0.2 psi	0.3%

Based on 150 cfm @ 100 psi through 50 feet of compressor air hose.

For maximum efficiency, provide large air lines from the compressor to the blast machine. Place the compressor as near as possible to the blast operation. Use the largest air hose available.

Impact of Nozzle Wear on Air Consumption

Nozzle	Orifice Size	Increase in Air Consumption
No. 4	1/4" (6.5mm)	16.6%
No. 5	5/16" (8.0mm)	60% or more than No. 4
No. 6	3/8" (9.5mm)	38% more than No. 5
No. 7	7/16" (11.0mm)	36% more than No. 6
No. 8	1/2" (12.5mm)	33% more than No. 7

System Air Volume Requirements @ 100 psi

Nozzle	Orifice Size	Volume of Air	Plus Helmet	Plus 50% (Reserve)	Min. Air Requirement
No. 4	1/4" (6.5mm)	81 2.3	20 0.5	50 1.4	151 cfm 4.2 m^3/min
No. 5	5/16" (8.0mm)	137 3.9	20 0.5	79 2.2	236 cfm 6.6 m^3/min
No. 6	3/8" (9.5mm)	196 5.5	20 0.5	108 3.0	324 cfm 9.0 m^3/min
No. 7	7/16" (11.0mm)	254 7.2	20 0.5	137 3.9	411 cfm 11.6 m^3/min
No. 8	1/2" (12.5mm)	338 9.6	20 0.5	179 5.0	537 cfm 16.1 m^3/min

Minimum Compressor Air Line Sizes

Nozzle	Nozzle Orifice Size	Min. Air Line I.D.
No. 3	3/16" (5.0mm)	1" (25.0mm)
No. 4	1/4" (6.5mm)	1" (25.0mm)
No. 5	5/16" (8.0mm)	1-1/4" (32.0mm)
No. 6	3/8" (9.5mm)	1-1/2" (38.0mm)
No. 7	7/16" (11.0mm)	2" (50.0mm)
No. 8	1/2" (12.5mm)	2" (50.0mm)
No. 10	5/8" (16.0mm)	2-1/2" (64.0mm)
No. 12	3/4" (19.0mm)	3" (76.0mm)

Abrasive Comparison

Material	Mesh Size	Shape	Density lbs/ft^3	Mohs	Friablility	# of Cycles	Source	Typical Applications
Silica Sand	6-270	◆	100	5.0-6.0	High	1	Natural	Outdoor blast cleaning
Min. Slag	8-80	◆	85-112	7.0-7.5	High	1-2	By-product	Outdoor blast cleaning
Garnet	8-300	◆	130-145	7.0	Medium	2-2.5	Natural	Cleaning, finishing, de-burring, etching
Steel Grit	10-325	◆	230	8.0	Low	200+	Manufactured	Removing heavy scale
Garnet Shot	8-200	●	280	8.0	Low	200+	Manufactured	Cleaning, peening
Aluminium Oxide	12-325	◆	125	9.0	Medium	6-8	Manufactured	Cleaning, finishing, de-burring, etching
Silicon Carbide	12-325	◆	110	9.5	Medium	5-6	Manufactured	Surface prep on extremely hard substrates
Glass Bead	10-400	●	85-90	5.5-6.0	Medium	8-10	Manufactured	Cleaning, finishing
Plastic	12-80	◆	45-60	3.0-4.0	Low/Medium	8-10	Manufactured	Paint stripping, deflashing, cleaning
Bicarbonate of Soda	60-170	◆	60	2.5	High	1	Manufactured	Cleaning, paint removal
XL Corn Hybrid Polymer	16-60	◆	45	3.0	Low	14-17	Manufactured	Composite paint removal, adhesive deflash
Corn Cob	8-40	◆	35-45	2.0-4.5	Medium	4-5	By-product	Removing paint from delicate surfaces

◆ = Angular ● = Spherical

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Hervey Bay Maryborough Tasmania

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