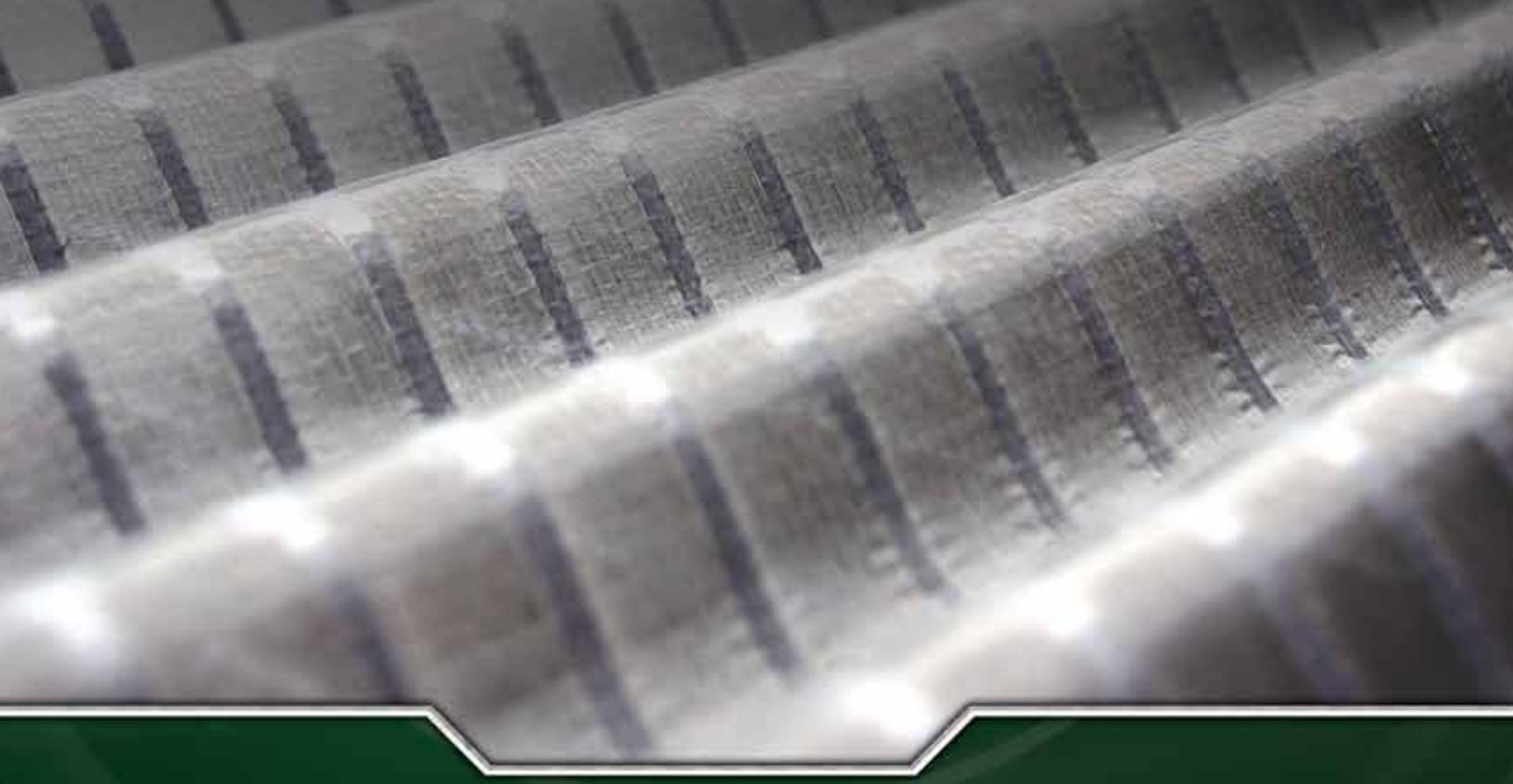
DERRICK®
EQUIPMENT COMPANY

DERRICK SCREEN TECHNOLOGY

API RP 13C (ISO 13501) COMPLIANT SCREENS



PYRAMID™ SCREEN

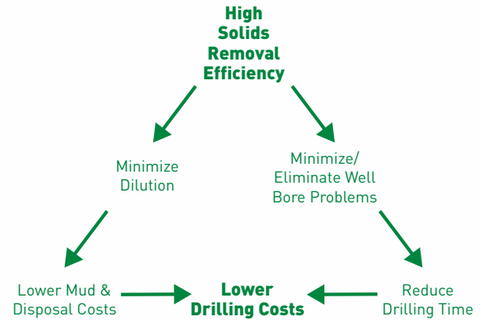
INNOVATIONS & TECHNOLOGY

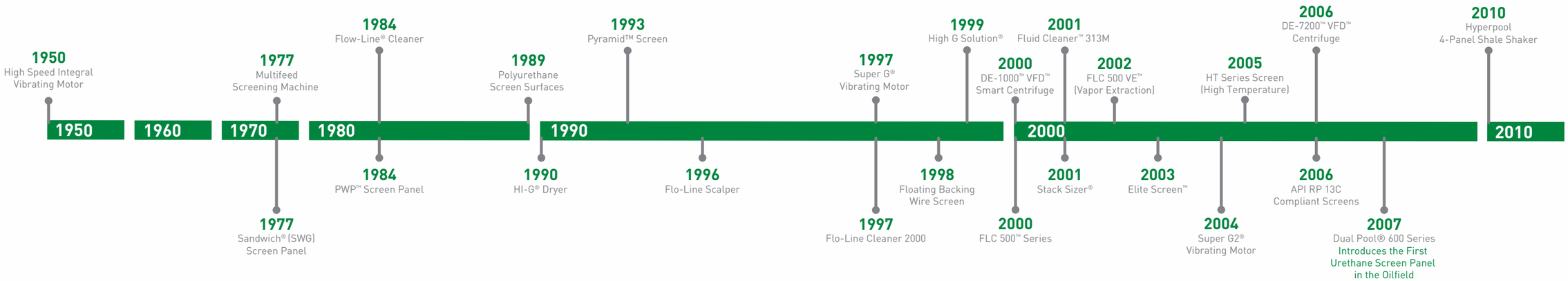
In 1977, Derrick Corporation expanded into the oilfield, establishing Derrick Equipment Company to serve this market. Derrick has been fully committed to furthering solids control technology through extensive research and development. Satisfying the ever-changing needs of the oil and gas industry for nearly forty years, Derrick combines several time proven products with new innovations to offer the most comprehensive and cost effective solids control systems in the industry.

Continuing to set the standard in solids control, Derrick Equipment Company is leading the way to API's new API RP 13C (ISO 13501), the new industry standard for physical testing and labeling of shaker screens. Until API RP 13C, no common standard existed for testing and labeling of screens. All Derrick screens offer cut point integrity and are API RP 13C (ISO 13501) compliant. Utilizing the most advanced and innovative R&D program, Derrick maintains its lead as provider of fine screening technology.

Increased Solids Removal Results In Lower Drilling Costs

Derrick screens are designed to maximize solids removal capabilities while significantly reducing costs associated with drilling fluid and disposal. The utilization of Derrick screens lowers the percentage of drilled solids in the mud system. Less dilution is required, decreasing total drilling fluid requirements and disposal costs. Cleaner drilling fluid will decrease down hole problems which can adversely affect drilling time. All the benefits of clean drilling fluid lead to one end result: **Lower Drilling Costs.**

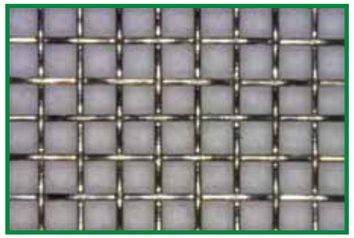




DERRICK SCREEN CLOTH

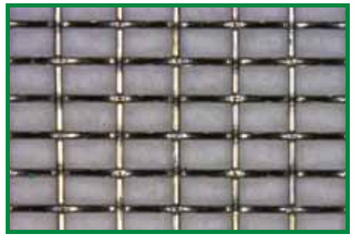
Extra Fine (DX™) Cloth

The Derrick (DX™) Extra Fine cloth series is used on the first multiple layer (Sandwich®) screens. The DX cloth is designed to maximize capacity, maintain cut point integrity, and minimize nearsize particle blinding.



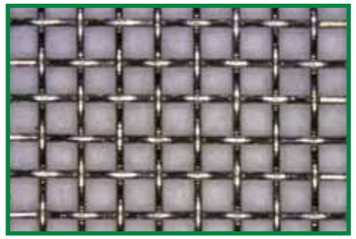
High Performance (HP™) Cloth

The Derrick (HP™) High Performance series cloth was developed to increase fluid capacity by utilizing slotted openings. Its slotted openings allow for higher flow rates to be processed without sacrificing cut point integrity.



Fine (DF™) Cloth

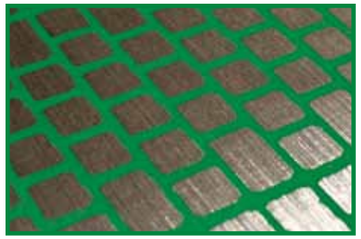
The Derrick (DF™) cloth has a slightly larger wire diameter than the DX cloth, but is thinner than market grade and tensile bolting cloth. The DF cloth is designed to maximize screen life, maintain cut point integrity and minimize nearsize particle blinding.



SCREEN PANEL CONSTRUCTION

PMD™

PMD+™



PWP™

Pyramid and Pyramid Plus Screens (PMD™ and PMD+™)

Derrick Equipment Company has revolutionized screening technology with the patented Pyramid (PMD) and Pyramid Plus (PMD+) screens. These revolutionary three-dimensional screens offer the benefits of traditional flat multi-layered screens while adding a significant increase in usable screen area. The result is a screen that increases fluid handling capacity. Pyramid and Pyramid Plus screens provide an easy, cost effective increase in shaker performance. Designed with the latest technology, Pyramid screens allow rigs to screen finer earlier in the drilling process, thus significantly reducing mud and disposal costs. All Derrick screens are API RP 13C compliant.

Repairable Plate (PWP™) Screen Panel

The Derrick PWP screens are constructed of three screen layers bonded to a perforated metal plate for added support and facilitation of repair. Bonding squares help maintain cut point integrity by stabilizing the sandwich screen, increasing durability by reducing screen flutter, and isolating any screen failures. The screen may be repaired using the stainless steel plugs supplied with the panel or by application of silicone rubber.

EXCLUSIVE BENEFITS:

Increased Shaker Capacity – Compared to the PWP, Pyramid and Pyramid Plus screens increase the total amount of usable API non-blanked screen area by 105% and 184% on a Derrick FLC 514 shaker. Fluid-handling capacity is increased up to 125%.

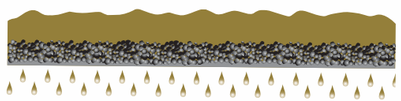
Enhanced Permeability – Gravity and vibration force the solids into the corrugated screen's troughs, thus allowing more fluid to pass through the top of the screen.

Screen Finer Faster – Utilizing Pyramid or Pyramid Plus screens enable shakers to screen 2 to 3 mesh sizes finer than traditional perforated plate flat screen panels. This maximizes the solids removal efficiency of the shaker.

Drier Cuttings – Pyramid screens minimize fluid loss by dispersing thinner layers of fluid over an increased screen area, resulting in a more effective and faster drying capability.

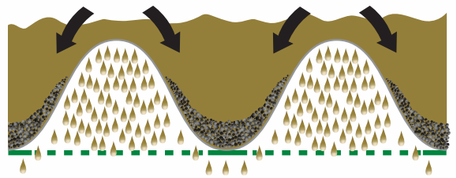
Fits Existing Shakers – Pyramid screens fit all Derrick shakers, thus allowing for the most efficient use of existing equipment. There is no need to modify or replace existing equipment.

Makes Fine Separations – Pyramid and Pyramid Plus screens are capable of making separations as fine as 43 microns.



Conventional Flat Screen
Solids Impede Fluid Flow

Screen Shape and Conductance



Corrugated Screen
Enhanced Permeability

REPLACEMENT SCREENS FOR DERRICK SHAKERS

Dilution and disposal costs are minimized with Derrick state-of-the-art screen surface technology. Combining high G-force vibrating motors with Derrick's exclusive Pyramid Screen technology significantly improves solids separation. Integrating the industry's latest advancements in screen surface design – higher capacity, longer screen life and optimal solids removal efficiency – Derrick screens can dramatically reduce operating costs.

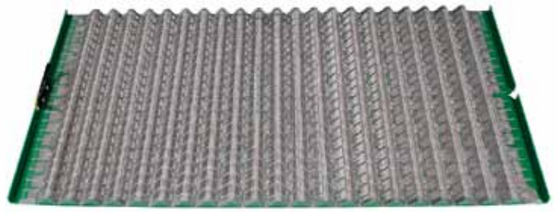
COMPRESSION SCREEN SYSTEMS

Hyperpool

Derrick's Hyperpool performance is optimized through the installation of Pyramid screens, permitting the use of finer mesh sizes at higher capacities. The Hyperpool's innovative screen compression system drives the center of the screen panel downward, firmly sealing the screen panel to the screen frame. Compression benefits include extended screen life, improved conveyance, elimination of ultra fine solids bypassing under screen panels and faster, and more user-friendly screen changes than any other shaker in the Derrick product line.

API RP 13C (ISO 13501)
Non - Blanked Open Screen Area

	PMD	PMD+
Hyperpool	25.36 sq. ft.	TBD



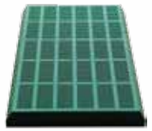
Hyperpool Series Screen

600 Series

Derrick's 600 Series screens, available in Pyramid and Pyramid Plus panels, are used on all Dual Pool 600 series shakers. The DP 600's innovative actuated screen compression system drives the center of the screen panel downward, firmly sealing the screen panel to the screen frame. Compression benefits include extended screen life, improved conveyance, elimination of ultra fine solids bypassing under screen panels and fast, user-friendly screen changes. Derrick's long-life urethane panels are used on models equipped with the scalping deck option.

API RP 13C (ISO 13501)
Non - Blanked Open Screen Area

	PMD	PMD+	Urethane
DP 616	29.1 sq. ft.	35.01 sq. ft.	–
DP 626	29.1 sq. ft.	35.01 sq. ft.	12 sq. ft.
DP 618	38.8 sq. ft.	46.68 sq. ft.	–
DP 628	38.8 sq. ft.	46.68 sq. ft.	16 sq. ft.



Scalping Deck 600 Series Urethane Screen

Pyramid (PMD) 600 Series Screen

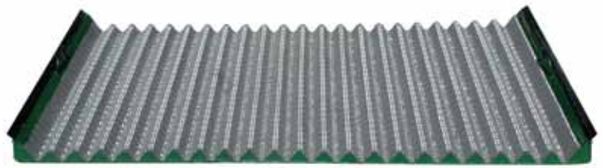
TENSIONING SCREEN SYSTEMS

500 Series

Derrick's 500 Series screens, available in Pyramid, Pyramid Plus and PWP panels are used on all FLC 500 series shale shakers. The FLC 500's innovative single-side tensioning system reduces screen panel replacement time to less than one minute per panel on average. This faster, easier and more reliable screen panel tensioning is provided by tensioning fingers and two Quick-Lok 1/2-turn tensioning bolts on each screen panel.

API RP 13C (ISO 13501)
Non - Blanked Open Screen Area

	PMD	PMD+
FLC 513	24.9 sq. ft.	34.5 sq. ft.
FLC 514	33.2 sq. ft.	46.0 sq. ft.



Pyramid (PMD) 500 Series Screen

48x30 Series

Derrick's 48 x 30 screens fit all Derrick FLC 2000™ 3- and 4-panel shale shakers, FLC with AWD, FLC Plus™, HI-G® Dryer and the Cascade 2000. They are available in Pyramid, Pyramid Plus and PWP panels. Fast, easy and reliable screen panel tensioning is provided by two pairs of Rapid-Change draw bolts on each side of each screen panel.

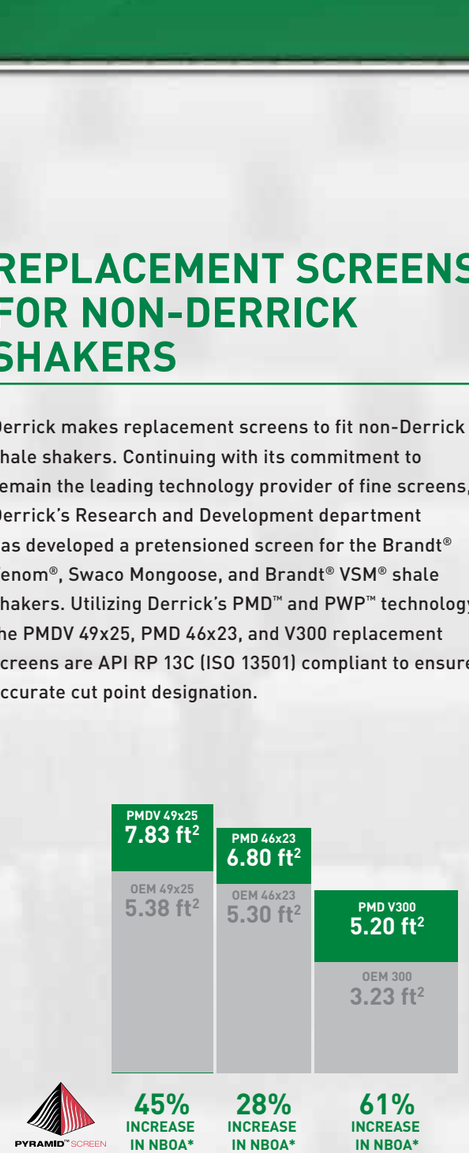
API RP 13C (ISO 13501)
Non - Blanked Open Screen Area

	PMD	PMD+
FLC 2000 3-panel	24.9 sq. ft.	31.95 sq. ft.
FLC 2000 4-panel	33.2 sq. ft.	42.6 sq. ft.

Pyramid (PMD) 48x30 Series Screen

REPLACEMENT SCREENS FOR NON-DERRICK SHAKERS

Derrick makes replacement screens to fit non-Derrick shale shakers. Continuing with its commitment to remain the leading technology provider of fine screens, Derrick's Research and Development department has developed a pretensioned screen for the Brandt® Venom®, Swaco Mongoose, and Brandt® VSM® shale shakers. Utilizing Derrick's PMD™ and PWP™ technology, the PMDV 49x25, PMD 46x23, and V300 replacement screens are API RP 13C (ISO 13501) compliant to ensure accurate cut point designation.



PYRAMID™ SCREEN

45% INCREASE IN NBOA*

28% INCREASE IN NBOA*

61% INCREASE IN NBOA*

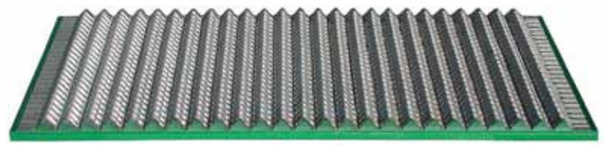
***NBOA = Non-Blanked Open Area**

PMDV 49x25 for Brandt King Cobra® Series Shakers

The PMD 49x25 is a superior pre-tensioned replacement screen for the Cobra™ and King Cobra shale shakers. The exclusive Derrick Pyramid technology offers up to 45% greater non-blanked open area, increasing capacity of the existing shaker package.The PTC 49x25 (PWP) flat screen is also available.

API RP 13C (ISO 13501)
Non - Blanked Open Screen Area

	PMD	PWP
Cobra	23.5 sq. ft.	15.0 sq. ft.
King Cobra	31.3 sq. ft.	20.0 sq. ft.



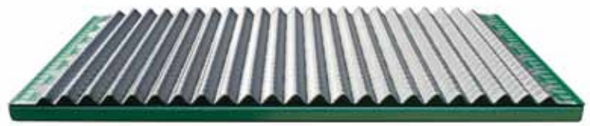
PMDV 49x25

PMD 46x23 for Swaco Mongoose Shakers

The PMD 46x23 is a superior pre-tensioned replacement screen for Mongoose shale shakers. The exclusive Derrick Pyramid technology offers up to 28% greater non-blanked open area, increasing capacity of the existing shaker package. The PTM 46x23 (PWP) flat screen is also available.

API RP 13C (ISO 13501)
Non - Blanked Open Screen Area

	PMD	PWP
Mongoose	27.2 sq. ft.	17.6 sq. ft.



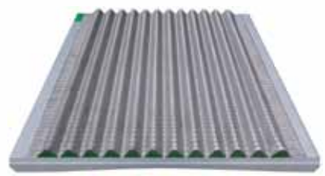
PMD 46x23

V300 for Brandt® VSM® Shakers

A pre-tensioned Pyramid screen is available for the VSM 300 shale shakers. The V300 screens ensure longer screen life and accurate cut point designation in compliance with API RP 13C. The exclusive Derrick Pyramid technology offers up to 61% greater non-blanked open area, increasing capacity of the existing shaker package. The PWP V300 flat screen is also available.

API RP 13C (ISO 13501)
Non - Blanked Open Screen Area

	PMD	PWP
V300	20.8 sq. ft.	14.6 sq. ft.



V300™ PMD

AVAILABLE SCREENS

New Screen Designation	API RP 13C Designation	Microns	API RP 13C Conductance kd/mm			48 x 30 [1]	500 Series [2]	600 Series [3]	Hyperpool [4]	VSM300 [5,6]	PTCV 49 x 25 [7]	PTM 46 x 23 [8]
			Available Construction: •PMD+ •PMD •PWP •HT			API RP 13C Non-Blanked Area (sq. ft.): Screens for Derrick Shakers					Screens for Non-Derrick Shakers	
			10.65 / 8.3 / 5.3	11.5 / 8.3 / 4.05	4.07	6.34					5.2 / 3.65	7.8 / 5.0	6.8 / 4.4
DX-A200	API 200	(78)	1.56	1.30	0.79	• • • •	• • • •	• • •	•	• •	• •	• •
DX-A170	API 170	(97)	2.01	1.48	0.98	• • • •	• • • •	• • •	•	• •	• •	• •
DX-A140	API 140	(115)	2.24	1.67	1.10	• • • •	• • • •	• • •	•	• •	• •	• •
DX-A120	API 120	(120)	2.14	1.78	1.39	• • • •	• • • •	• • •	•	• •	• •	• •
DX-A100	API 100	(154)	2.85	2.30	1.36	• • • •	• • • •	• • •	•	• •	• •	• •
DX-A80	API 80	(184)	3.08	2.45	1.53	• • • •	• • • •	• • •	•	• •	• •	• •
DX-A70	API 70	(221)	4.71	3.56	2.21	• • • •	• • • •	• • •	•	• •	• •	• •
DX-A60	API 60	(257)	5.87	4.13	2.71	• • • •	• • • •	• • •	•	• •	• •	• •
DX-A50	API 50	(314)	6.62	5.42	3.25	• • • •	• • • •	• • •	•	• •	• •	• •
DX-A45	API 45	(360)	7.38	6.72	3.80	• • • •	• • • •	• • •	•	• •	• •	• •
DX-A40	API 40	(453)	10.54	8.03	5.16	• • • •	• • • •	• • •	•	• •	• •	• •
DX-A35	API 35	(503)	11.63	9.76	5.91	• • • •	• • • •	• • •	•	• •	• •	• •
HP-A325	API 325	(43)	1.23	0.86	0.66	• • • •	• • • •					
HP-A270	API 270	(50)	1.27	0.90	0.67	• • • •	• • • •					
HP-A230	API 230	(65)	1.30	0.93	0.68	• • • •	• • • •					
HP-A200	API 200	(81)	1.54	1.11	0.72	• • • •	• • • •					
HP-A170	API 170	(83)	2.05	1.46	0.93	• • • •	• • • •					
HP-A140	API 140	(103)	2.50	1.85	1.06	• • • •	• • • •					
HP-A120	API 120	(120)	2.94	2.33	1.25	• • • •	• • • •					
HP-A100	API 100	(151)	3.63	2.57	1.46	• • • •	• • • •					
HP-A80	API 80	(184)	4.35	3.20	1.94	• • • •	• • • •					
HP-A70	API 70	(203)	5.33	4.35	3.46	• • • •	• • • •					
HP-A60	API 60	(255)	5.69	4.98	4.44	• • • •	• • • •					
HP-A50	API 50	(276)	6.80	5.26	5.01	• • • •	• • • •					
HP-A45	API 45	(336)	7.71	7.38	6.71	• • • •	• • • •					
HP-A40	API 40	(392)	9.66	7.67	6.61	• • • •	• • • •					
HP-A35	API 35	(499)	11.57	9.36	8.59	• • • •	• • • •					
DF-A325	API 325	(44)	0.71	0.51	0.39	• • • •	• • • •	• •	•	• •	• •	• •
DF-A270	API 270	(53)	0.89	0.62	0.47	• • • •	• • • •	• •	•	• •	• •	• •
DF-A230	API 230	(67)	1.22	0.85	0.64	• • • •	• • • •	• •	•	• •	• •	• •
DF-A200	API 200	(76)	1.40	1.07	0.74	• • • •	• • • •		•			
DF-A140	API 140	(104)	1.20	0.94	0.78	• • • •	• • • •		•			
DF-A120	API 120	(121)	1.54	1.17	0.88	• • • •	• • • •		•			
DF-A100	API 100	(143)	2.08	1.48	1.21	• • • •	• • • •		•			
DF-A20	API 20	(821)	20.61	15.46	14.05	• • • •	• • • •	• •	•			

[1] Fits Derrick FLC 2000™ 3 and 4-Panel, FLC with AWD, FLC Plus™, HI-G® Dryer, Cascade 2000

[2] Fits Derrick FLC 500 Series

[3] Fits Derrick DP 600 Series

[4] Fits Hyperpool

[5] Fits Brandt VSM 300™ Shakers

[6] HT option is available for PMD screens only. PWP screens are inherently HT

[7] Fits Brandt Cobra® and King Cobra Venom Shakers

[8] Fits Swaco Mongoose Shakers

WHAT IS API RP 13C (ISO 13501)?

A physical testing and labeling procedure for shaker screens. To be API RP 13C compliant, a screen must be tested and labeled in accordance with this recommended practice. Internationally, API RP 13C is ISO 13501.

API RP 13C (ISO 13501) COMPLIANCE TESTS

To meet API RP 13C compliance two tests are required: cut point and conductance. The tests describe a screen without predicting its performance and can be performed anywhere in the world. The cut point test is based on a time-proven testing method used by ASTM to classify particles by size. The shaker screen designation is identified by matching the screen's cut point to the closest ASTM sieve cut point. The D100 separation is used for assigning screen designations (Fig. 1). D100 means that 100 percent of the particles larger than the test screen will be retained, and all finer particles will pass through. The conductance test measures the ability of a fluid to pass through the screen.

After identifying the cut point and conductance, API RP 13C requires application of a permanent tag or label to the screen that is visible and legible (Fig. 2). Both cut point, expressed as an API number, and conductance shown in kD/mm are required on the screen label.

The new procedure is a revision of the previous API RP 13E, which was based on optical measurements of the screen opening using a microscope and computer analysis. Under API RP 13E, screen designations were based on individual manufacturer test methods which produced inconsistent labeling.

For more information on Derrick's API RP 13C compliance testing, please visit: **www.Derrick.com**

Fig. 1
D100 Separation and API Screen Number

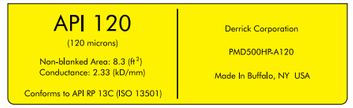
Table 5 (found on page 40 and 41 of API RP 13C)

D100 Separation and API Screen Number

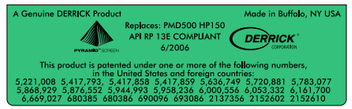
D100 Separation (Microns)	API Screen Number
>780,0 to 925,0	API 20
>655,0 to 780,0	API 25
>550,0 to 655,0	API 30
>462,5 to 550,0	API 35
>390,0 to 462,5	API 40
>327,5 to 390,0	API 45
>275,0 to 327,5	API 50
>231,0 to 275,0	API 60
>196,0 to 231,0	API 70
>165,0 to 196,0	API 80
>137,5 to 165,0	API 100
>116,5 to 137,5	API 120
>98,0 to 116,5	API 140
>82,5 to 98,0	API 170
>69,0 to 82,5	API 200
>58,0 to 69,0	API 230
>49,0 to 58,0	API 270
>41,5 to 49,0	API 325
>35,0 to 41,5	API 400
>28,5 to 35,0	API 450
>22,5 to 28,5	API 500
>18,5 to 22,5	API 635

Fig. 2
Required Screen Tag Information

New API RP 13C Screen Tag



Old API RP 13E Screen Tag



Derrick's New Screen Box & Bar Code Sticker

API RP 13C (ISO 13501)

Master Tag Reference Chart

All API RP 13C / ISO 13501 test results are from an independant lab.

API RP 13C Designation		NEW Part # (According to API RP 13C)		OLD Part # (According to API RP 13C)	New Conductance # (According to API RP 13C)		
API Screen Number	API Micron Cut Point Range	Screen Panel Designation	D100 Cut Point (Microns)	Screen Panel Designation	PWP™	PMD™	PMD+™
API 200	> 69,0 to 82,5	DX-A200	78	DX 250	0.79	1.30	1.56
API 170	> 82,5 to 98,0	DX-A170	97	-	0.98	1.48	2.01
API 140	> 98,0 to 116,5	DX-A140	115	DX 175	1.10	1.67	2.24
API 120	> 116,5 to 137,5	DX-A120	120	-	1.39	1.78	2.14
API 100	> 137,5 to 165,0	DX-A100	154	DX 140	1.36	2.30	2.85
API 80	> 165,0 to 196,0	DX-A80	184	DX 110	1.53	2.45	3.08
API 70	> 196,0 to 231,0	DX-A70	221	DX 84	2.21	3.56	4.71
API 60	> 231,0 to 275,0	DX-A60	257	DX 70	2.71	4.13	5.87
API 50	> 275,0 to 327,5	DX-A50	314	-	3.25	5.42	6.62
API 45	> 327,5 to 390,0	DX-A45	360	DX 50	3.80	6.72	7.38
API 40	> 390,0 to 462,5	DX-A40	453	DX 44	5.16	8.03	10.54
API 35	> 462,5 to 550,0	DX-A35	503	DX 38	5.91	9.76	11.63
API 325	> 41,5 to 49,0	HP-A325	43	HP 310	0.66	0.86	1.23
API 270	> 49,0 to 58,0	HP-A270	50	-	0.67	0.90	1.27
API 230	> 58,0 to 69,0	HP-A230	65	-	0.68	0.93	1.30
API 200	> 69,0 to 82,5	HP-A200	81	HP 230	0.72	1.11	1.54
API 170	> 82,5 to 98,0	HP-A170	83	HP 200	0.93	1.46	2.05
API 140	> 98,0 to 116,5	HP-A140	103	HP 180	1.06	1.85	2.50
API 120	> 116,5 to 137,5	HP-A120	120	HP 150	1.25	2.33	2.94
API 100	> 137,5 to 165,0	HP-A100	151	HP 125	1.46	2.57	3.63
API 80	> 165,0 to 196,0	HP-A80	184	HP 100	1.94	3.20	4.35
API 70	> 196,0 to 231,0	HP-A70	203	HP 80	3.46	4.35	5.33
API 60	> 231,0 to 275,0	HP-A60	255	HP 70	4.44	4.98	5.69
API 50	> 275,0 to 327,5	HP-A50	276	HP 60	5.01	5.26	6.80
API 45	> 327,5 to 390,0	HP-A45	336	HP 50	6.71	7.38	7.71
API 40	> 390,0 to 462,5	HP-A40	392	HP 45	6.61	7.67	9.66
API 35	> 462,5 to 550,0	HP-A35	499	HP 40	8.59	9.36	11.57
API 325	> 41,5 to 49,0	DF-A325	44	-	0.39	0.51	0.71
API 270	> 49,0 to 58,0	DF-A270	53	-	0.47	0.62	0.89
API 230	> 58,0 to 69,0	DF-A230	67	DF 280	0.64	0.85	1.22
API 200	> 69,0 to 82,5	DF-A200	76	DF 230	0.74	1.07	1.40
API 170	> 98,0 to 116,5	DF-A140	104	DF 200	0.78	0.94	1.20
API 140	> 116,5 to 137,5	DF-A120	121	DF 165	0.88	1.17	1.54
API 120	> 137,5 to 165,0	DF-A100	143	DF 145	1.21	1.48	2.08
API 100	> 780,0 to 925,0	DF-A20	821	DF 24	14.05	15.46	20.61

API RP 13C Master Tag Reference Chart - RM (9-22-2008)

Derrick Equipment Company

15630 Export Plaza Drive | Houston, Texas 77032 U.S.A.

Phone: (866) DERRICK or (281) 590-3003 | Fax: (281) 590-6187

E-mail: derrick@derrick.com | www.Derrick.com

Satellite Offices

222 Burgess Drive, Unit 2 | Broussard, Louisiana 70518

Toll Free: (877) 635-3354 | Fax: (337) 839-0870

Satellite Offices (cont.)

6750 Pat Ave. | Oklahoma City, Oklahoma 73149

Phone: (405) 208-4070 | Fax: (337) 839-0870

5754 Leopard | Corpus Christi, Texas 78408

Phone: (361) 299-6080

Rockies (CO, UT, WY, MT, ND)

115 East 1st Street | Eaton, Colorado 80615

Phone: (307) 277-4529