



# TEST REPORT

5001 East Philadelphia Street  
Ontario, California – USA 91761-2816

Ph: 909.472.4100 | Fax: 909.472.4243  
<http://www.iapmortl.org>

**Report No.:** 1973-14002

**Report Issued:** September 26, 2014

**Project No.:** 23275

**Client:** Saudi Cast  
P.O. Box 3505  
Riyadh, Saudi Arabia 11481

**Contact:** Mr. Karam Khaled

**Source of Samples:** The samples were sent by Saudi Cast, and received by IAPMO R&T Lab on April 21, 2014, and August 29, 2014 in good conditions.

**Date of Testing:** April 25, 2014 to September 24, 2014

**Sample Description:** Roof drains. Refer to page 2 for model numbers and descriptions.

**Scope of Testing:** To determine the flow rates through roof drains based on the head height of water at the roof drain, per section 7.2 "Recommended test protocol to be added to ASME A112.6.4" of "Storm Drainage System Research Project-Flow rate Through Roof Drains" by ASPE.

**CONCLUSION:** See results.

By our signatures below, we certify that all the testing and sample preparation for this report was performed under continuous, direct supervision of IAPMO R&T Lab, unless otherwise stated.

Tested by,

Reviewed by:

Hanks Ninh, Project Engineer

Sean Vuu, P.E., Manager, Specialty Projects

No.	Vender	Model No.	Description
1	Saudi Cast	FD-4062	2" Cast Iron outlet (Inside Caulk)
2	Saudi Cast	FD-4063	3" Cast Iron outlet (Inside Caulk)
3	Saudi Cast	FD-4064	4" Cast Iron outlet (Inside Caulk)
4	Saudi Cast	FD-4083	3" Cast Iron outlet (Inside Caulk)
5	Saudi Cast	FD-4084	4" Cast Iron outlet (Inside Caulk)
6	Saudi Cast	FD-4086	6" Cast Iron outlet (Push-On)
7	Saudi Cast	FD-4162	2" Cast Iron outlet (Spigot)
8	Saudi Cast	FD-4163	3" Cast Iron outlet (Spigot)
9	Saudi Cast	FD-4164	4" Cast Iron outlet (Spigot)
10	Saudi Cast	FD-4166	6" Cast Iron outlet (Spigot)

Test Procedure: flow rate tests were conducted at 1", 2", 3", 4", 5" and 6" of water heights above the test pan floor, on 2 scenarios:

- 1) Outlets were connected to 10 feet straight pipes of the same diameters as the drains' outlets.
- 2) Outlets were connected to elbowed pipes of 1", 4" and 8" long of the same diameters as the drains' outlets.

Finding: 10 feet straight pipes at outlets:

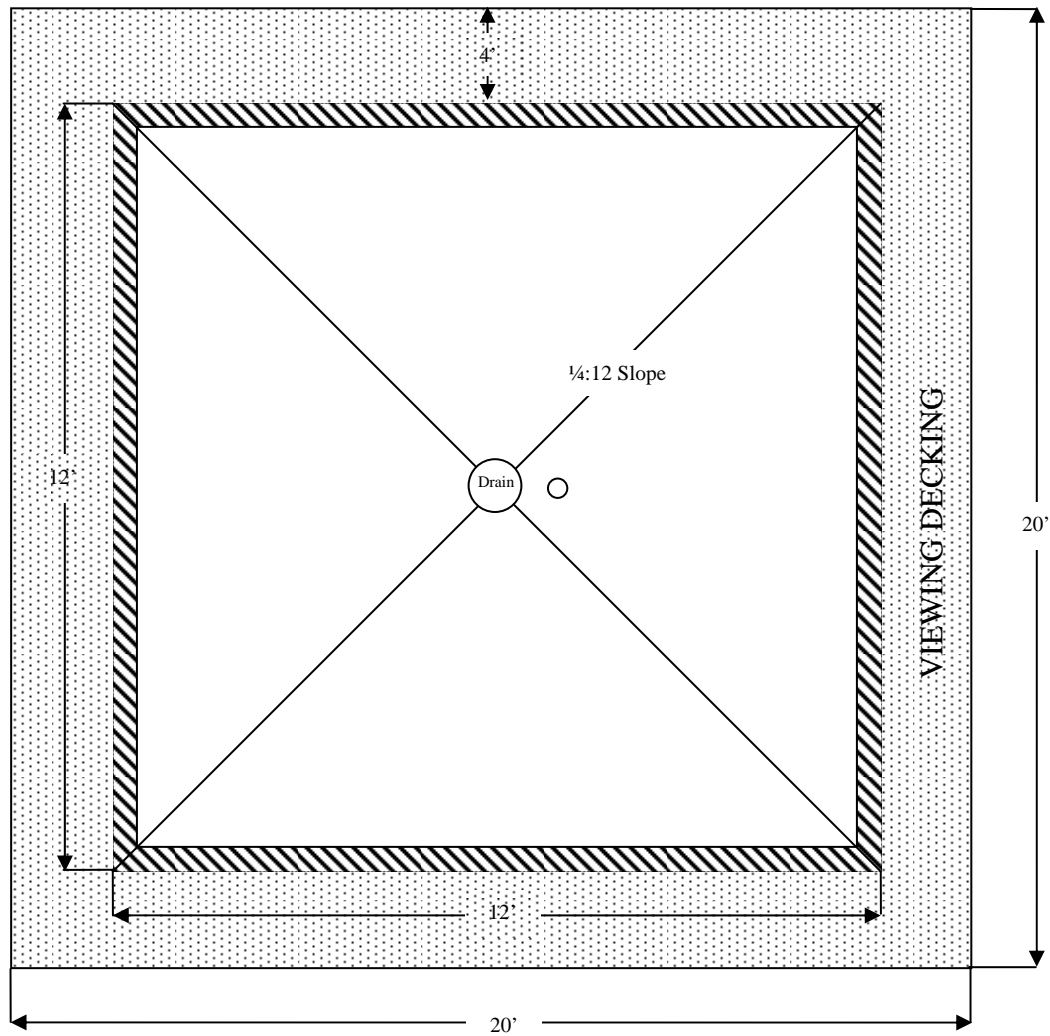
Model	Flow rates (gpm) @ different water heights					
	1" W.C.	2" W.C.	3" W.C.	4" W.C.	5" W.C.	6" W.C.
FD-4062	10	40	116	184	196	204
FD-4063	10	48	123	208	388	432
FD-4064	10	62	134	287	564	708
FD-4083	10	106	288	365	396	416
FD-4084	10	148	326	573	723	746
FD-4086	10	168	382	638	936	1260
FD-4162	10	74	168	172	175	177
FD-4163	10	76	192	342	448	467
FD-4164	10	78	182	307	442	618
FD-4166	10	83	191	360	582	783

Finding: elbowed pipes at outlets:

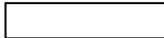


Model	Flow rates (gpm) @ different water heights					
	1" W.C.	2" W.C.	3" W.C.	4" W.C.	5" W.C.	6" W.C.
FD-4062	10	38	114	126	130	133
FD-4063	10	42	118	208	284	292
FD-4064	10	60	130	242	484	528
FD-4083	10	104	188	207	223	233
FD-4084	10	144	293	543	562	582

FD-4086	10	162	343	598	895	1240
FD-4162	10	95	138	143	146	148
FD-4163	10	92	187	319	338	346
FD-4164	10	94	168	296	427	594
FD-4166	10	93	184	298	482	707

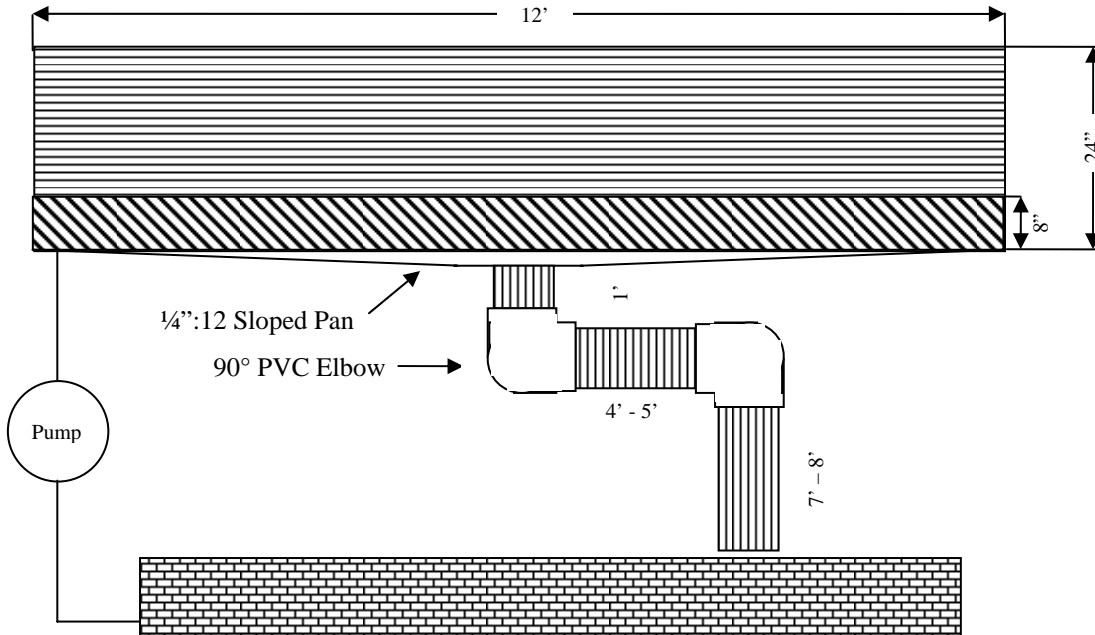
Overhead View (Figure 1)







Legend

-  = Test Pan (Area)
-  = Viewing Deck
-  = Baffle System

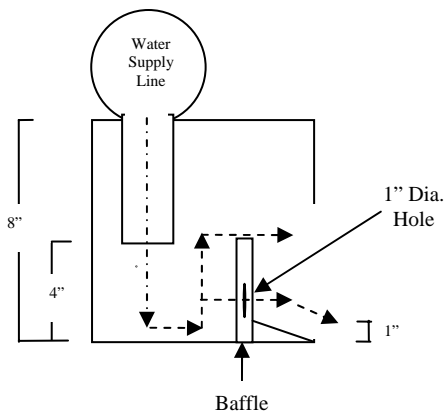
Side View (Figure 2)  
From Center



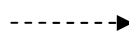
Legend

-  = Test Pan Side
-  = PVC Drain Pipe
-  = Recirculation Tank
-  = Baffle System

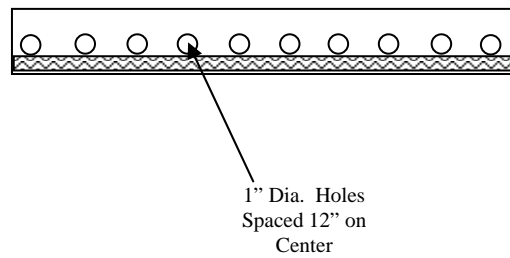
Baffle System Cutout Figure 3




Legend

-  = Water Flow

Baffle Front View Figure 4

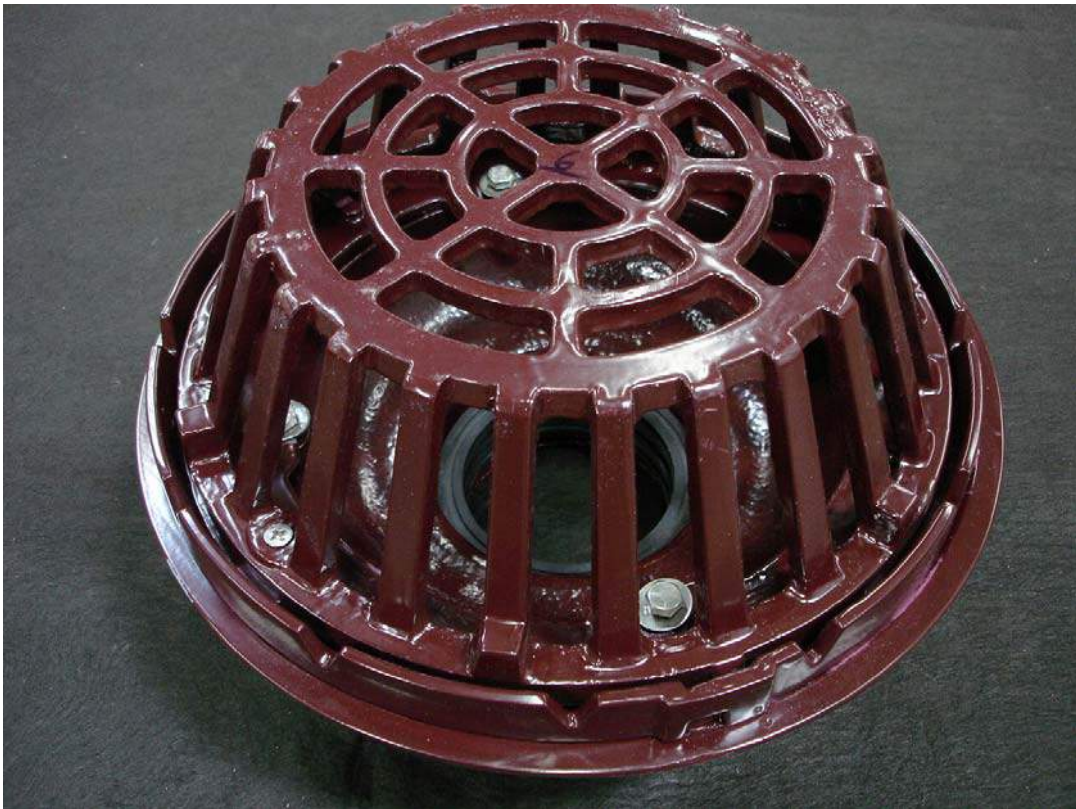


Legend

-  = Sloped Ramp



FD-4083  
FD-4084







FD-4086  
FD-4062







FD-4063  
FD-4064







FD-4162  
FD-4163







FD-4164  
FD-4166

