



Registered Data Sheet Perforating System Evaluation, API RP 19B Section 1

API Form 19B-Section 1

Conforms to All Requirements of Section 1

Special Test - See Remarks/Exceptions below

Service Company	BVT, CJSC		Explosive Weight	11.5 gm, RDX powder,	Case Material	Steel			
Gun OD & Trade Name	2.48" (63 mm)	PKO63-AT	Max Temp. °F	302(150°C) 2hr 284(140°C) 5hr 266(130°C) 12hr	248(120°C) 30hr 230(110°C) 72hr				
Charge Name	ZPK63-AT-M-04		Maximum Pressure Rating	11603 (80 MPa)	psi,	Carrier Material	Steel		
Manufacturer Charge Part No.	ZPK63-AT-M-04	Date of Manufacture	April 07, 2014	Shot Density Tested	6.1 (20 shots/m)	shots/ft			
Gun Type	Expendable Gun TCP/Wireline		Recommended Minimum ID for Running	3.15 (80 mm)		in.			
Phasing Tested	60 degrees,	Firing Order:	Top Down	X	Bottom up	Available Firing Mode:	Selective X Simultaneous		
Debris Description	N/A		Debris Weight	N/A	gm/charge,	Debris	N/A in/charge		
Remarks/Exceptions per Section 1.11	Casing used: 4,016" (102 mm)x0,26"(6,5 mm) GRADE D, GOST 632-80; Gun shot with water								
Casing Data	4,016" (102 mm)	OD, Weight	10,21 (15,2 kg/m)	lb/ft	API Grade,	Date of Section 1 Test	May 19, 2014		
Target Data	78,74" (2000 mm)	OD, Amount of Cement	7583,9 (3440kg)	lb,	Amount of Sand	15167,8 (6880 kg)	lb, Amount of Water	3943,6 (1788,8 kg)	lb.
Date of Compressive Strength Test	May 19, 2014	Briquette Compressive Strength	7556,2 (52,10 MPa)	psi,	Age of Target	32	days		

Shot No.	No 1	No 2	No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11
Clearance, in (mm)	0.31 (8.0)	0.43 (11.0)	0.70 (17.7)	0.85 (21.5)	0.70 (17.7)	0.43 (11.0)	0.31 (8.0)	0.43 (11.0)	0.70 (17.7)	0.85 (21.5)	0.70 (17.7)
Casing Hole Diameter, Short Axis, in (mm)	0.30 (7.70)	0.31 (8.00)	0.28 (7.10)	0.32 (8.10)	0.31 (7.80)	0.28 (7.20)	0.29 (7.40)	0.31 (8.00)	0.29 (7.30)	0.30 (7.70)	0.28 (7.10)
Casing Hole Diameter, Long Axis, in (mm)	0.31 (7.80)	0.32 (8.10)	0.30 (7.70)	0.35 (9.00)	0.31 (8.00)	0.29 (7.30)	0.30 (7.50)	0.31 (8.00)	0.30 (7.70)	0.31 (8.00)	0.28 (7.10)
Average Casing Hole Diameter, in (mm)	0.31 (7.75)	0.32 (8.05)	0.29 (7.40)	0.34 (8.55)	0.31 (7.90)	0.29 (7.25)	0.29 (7.45)	0.31 (8.00)	0.30 (7.50)	0.31 (7.85)	0.28 (7.10)
Total Depth, in (mm)	25.5 (648)	28.0 (710)	Lost	31.1 (790)	26.9 (682)	29.6 (752)	21.6 (548)	27.5 (699)	22.4 (569)	28.2 (716)	27.0 (685)
Burr Height, in (mm)	0.08 (2.00)	0.07 (1.70)	0.04 (1.10)	0.04 (1.10)	0.04 (1.00)	0.06 (1.50)	0.07 (1.80)	0.06 (1.40)	0.04 (1.10)	0.07 (1.70)	0.04 (1.00)

Shot No.	No 12	No 13	No 14	No 15	No 16	No 17	No 18	No 19	No 20	No 21	No 22	AVERAGE
Clearance, in (mm)	0.43 (11.0)	0.31 (8.0)	0.43 (11.0)	0.70 (17.7)	0.85 (21.5)	0.70 (17.7)	0.43 (11.0)	0.31 (8.0)	0.43 (11.0)			xxxxx xxxxxx
Casing Hole Diameter, Short Axis, in (mm)	0.30 (7.60)	0.29 (7.30)	0.29 (7.40)	0.30 (7.50)	0.28 (7.00)	0.33 (8.40)	0.28 (7.00)	0.28 (7.00)	0.31 (7.90)			0.30 (7.53)
Casing Hole Diameter, Long Axis, in (mm)	0.31 (8.00)	0.30 (7.60)	0.30 (7.70)	0.31 (7.80)	0.29 (7.40)	0.35 (8.90)	0.28 (7.00)	0.30 (7.70)	0.34 (8.60)			0.31 (7.85)
Average Casing Hole Diameter, in (mm)	0.31 (7.80)	0.29 (7.45)	0.30 (7.55)	0.30 (7.65)	0.28 (7.20)	0.34 (8.65)	0.28 (7.00)	0.29 (7.35)	0.32 (8.25)			0.30 (7.69)
Total Depth, in (mm)	28.5 (723)	25.4 (646)	27.6 (700)	26.0 (660)	26.7 (677)	26.3 (667)	29.4 (747)	29.4 (747)	26.3 (667)			27.0 (686)
Burr Height, in (mm)	0.04 (1.00)	0.04 (1.10)	0.06 (1.60)	0.04 (1.10)	0.04 (1.10)	0.05 (1.30)	0.05 (1.20)	0.04 (1.00)	0.09 (2.40)			0.05 (1.36)

Remarks The gun can be used in gas wells. Penetration normalized to 5000 psi by method of SPE 27424 (approx. 3,8% / 1000psi) = 29,6 " (753 mm)

Manufacturer's Certification

Type of Certification: Self Third Party

I certify that these tests were made according to the procedures as outlined in API 19B: Recommended Practice for Evaluation of Well Perforators, Second Edition, September 2006. All of the equipment used in these tests, such as the guns, jet charges, detonator cord, etc., was standard equipment with our company for the use in the gun being tested and was not changed in any manner for the test. Furthermore, the equipment was chosen at random from stock and therefore will be substantially the same as the equipment that would be furnished to perforate a well for any operator. API neither endorses these tests nor recommends the use of the perforator system describes.

API Witness A. Tovmachenko May 22, 2014 (Date)

X CERTIFIED BY A. Yakuba Technical Director May 22, 2014 BVT, CJSC 41 Rabochaya St., Samara, 443041, Russian Federation
RECERTIFIED BY (Company Official) (Title) (Date) (Company) (Address)

Name of test as it should appear on website: PKO63-AT / ZPK63-AT-M-04

Name of test as it should appear on application and application date: ZPK63-AT-M-04 / PKO63-AT April 04, 2014