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WARNING: Since we have no control over equipment or data which may be used with this program, no responsibility is implied or assumed for results obtained through its use. Input data and results may be incorrect or wrong. Therefore the use of this data for loading ammunition can cause serious injury to personnel and material. The computer-results had to be checked against data available in current loading manuals.

**LOT-TO-LOT VARIATIONS OF POWDERS, PRIMER SUBSTITUTION AND COMPONENT CHANGE OFTEN RAISE PRESSURES TO UNSAFE LEVELS. THE USER MUST ASSUME THE ENTIRE RISK OF USING THIS DATA FOR LOADING PURPOSES.**

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**User Data:**

Date:8-Apr-2015

Time:23:12:22

File: xpert 270 sabi 105gr.dat

**Cartridge / Caliber**

.270 SABI

**Bullet**

.277, 105 gr, XPERT

Maximum Average Pressure, allowed	60191 psi.	4150 bar (Piezo Wildcat)	with flatbase	
Groove Caliber	0.277 in.	7.04 mm	Bullet Weight	105.0 gr. 6.8 gm
Case Capacity, overflow	48.01 gr. H2O	3.117 cm <sup>3</sup>	Bullet Length	1.189 in. 30.2 mm
Case Length	2.000 in.	50.8 mm	Bullet Seating Depth	0.551 in. 14.0 mm
Cartridge O.A. Length	2.638 in.	67.0 mm	Barrel/Tube Length	24.0 in. 609.6 mm
Shot Start / Init Pressure	3625 psi.	249.94 bar	Cross Section Area of Bore	0.05971 in. <sup>2</sup> 0.3852 cm <sup>2</sup>

**Propellant type**

Somchem S355

Charge Weight	37.0 gr.	2.398 gm	Load Density	235.7 gr./in. <sup>3</sup>	0.932 gm/cm <sup>3</sup>
Heat of Explosion, Potential	253.4 J/gr.	3910 J/gm	Energy Density of Charge	59731 J/in. <sup>3</sup>	3645 J/cm <sup>3</sup>
Propellant Solid Density	404.63 gr./in. <sup>3</sup>	1.6 gm/cm <sup>3</sup>	Used Ratio of Specific Heats cp/cv	1.2291	
Burning Rate Factor Ba	0.5 1/s		Weighting Factor	0.5	
Burning Function Limit Z1	0.39		Prog.-/ Degressivity Factor a0	2.36	
Factor b	1.774		Bulk Density	227.6 gr./in. <sup>3</sup>	0.900 gm/cm <sup>3</sup>

**Calculated and Estimated Data:**

Bullet Shank Seating Depth	0.551 in.	14.0 mm	Capacity Displaced by Seated Bullet	0.0333 in. <sup>3</sup>	0.545 cm <sup>3</sup>
Useable Case Capacity	0.1569 in. <sup>3</sup>	2.572 cm <sup>3</sup>	Bullet Travel at Muzzle Exit	22.55 in.	572.8 mm
Loading Ratio("Density") / Filling	103.6 % = compressed		Charge Fraction Burnt at Shot Start	1.25 %	

**Predicted Data:**

Maximum Chamber Pressure	43065 psi.	2969 bar	Bullet Travel at Pmax	1.58 in.	40.1 mm
<b>at Muzzle Exit:</b>					
Bullet Velocity	2832 fps.	863.1 m/s	Pressure at Muzzle	7097 psi.	489 bar
Bullet Energy	1869 ft.lbs.	2535 Joule	Bullet Barrel Time	1.184 ms	
Propellant Burnt	93.7 %		Ballistic Efficiency	27.0 %	

Check Loading Manuals for Safe Minimum Charge Weight to Avoid Hazardous Ignition Conditions like Secondary Explosion Effects !

Real maximum (peak) of pressure is reached while bullet moves within barrel.

End of combustion occurs after the bullet's base passes muzzle.

