

INS NATIONAL FIREARMS UNIT

BALLISTIC PROTOCOL SYMPOSIUM APRIL 28-29, 1998

SURVEY RESULTS MATRIX

Block Size	6" x 6" x 16" =	13	6" x 6" x 18" =	8	Other = 18" rifle	6" x 6" =	1		
Mix temperature	Kind and Knox =	17	Cold to hot =	3	(temps varied 120F to 140F)	NATO =	3		
Gelatin calibration velocity	600 fps \pm 5 fps =	5	600 fps \pm 10 fps =	5	Other = 4 (580-600 fps)				
Gelatin calibration inches	3.25 to 3.75 =	5	Other- 11 (3.5-3.75=)						
Gelatin percent w/ water	10% =	17	20% =	4					
TEST PROTOCOL									
Bare gelatin		21							
H. clothed gelatin		6							
4x denim substitute		17							
Plywood		1							
Sheetrock		14							
20 gauge steel		16	Secondary check	3					
Compound angle windshield		19	Secondary check	1					
20 yard light clothed gel		1							
20 yard windshield		3							
Other	Kevlar = 2								
MINIMUM PENETRATION	8 inches =	5	9 inches =	8	10 inches =	7	12 inches =	2	
MAXIMUM PENETRATION	14 inches =	3	15 inches =	13	16 inches =	6			
OTHER	Unlimited through barriers =	1							
WEIGHT ASSIGNED TO TESTS									
BARE GELATIN	10% =	5	20% =	11	30% =	2	40% =		
H. CLOTHED GEL	10% =		20% =	2	30% =	3	40% =	10	50% = 2 60% = 2
SHEETROCK	10% =	8	20% =	4	30% =		40% =		
COM WINDSHIELD	10% =	3	20% =	9	30% =5		40% =	2	
STEEL	10% =	4	20% =	5	30% =		40% =		Pass/fail only = 1
OTHER	Light clothed gel @ 20 yds 10 =		Steel @ 20 yds 10% =		Windshield @ 20yds 10% =	1			
FULL EXPANSION OF PROJ. @	.5 inches =	2	.75 inches =	5	1.0 inches =	3	2 inches =	4	3 inches = 1 4 inches = 4 (Yaw)
CLASSIFICATION OF PROJECTILE									
INS CLASSIFICATION									
		4							
ACTIVE/PASSIVE CLASSIFICATION									
Both		6							
None		6							
RECORDED MEASUREMENTS									
Projectile expansion		16							
Retained weight		17							
Depth of pen in gel		21							
Length of temp cavity		18							
Width of temp cavity		18							
Mid point temp cavity		18							
Stress cracks		8							
General location of fragments		8							
Specific location of fragments		4							
Length of wound channel of major frag		8							
Muzzle velocity of projectile		21							
Gel exit energy of projectile (short block)									
OTHER	Measure TSC from HSP =	13	Liquid volume =	9					
Fuller Index System									
Yes		11							
No		6							
Yes, with reservations		4	Other/NATO	3					
NEW PROTOCOL JUSTIFIABLE?	Yes =	22	No =	0					