



# DART IMPACT FAILURE WEIGHT CHART

(Ref: ASTM D-1709)

Customer: \_\_\_\_\_  
 Sample: \_\_\_\_\_

Test Conditions:

Laboratory: \_\_\_\_\_  
 Operator: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Dart Instrument Model No. \_\_\_\_\_  
 Thickness Instrument Model No. \_\_\_\_\_

Note: 0 denotes non-failure  
 X denotes failure

- Method A (26in., 1.5 in.)
- Method B (60in., 2.0 in.)
- Custom: 60 in., 24in. Stem B Head/Weights

MISSILE WEIGHT, g. TEST RESULTS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	NJ I INJ										
165							1																				1	3	3							
150					0		1		1		1							1									4	2	8							
135	1			0				0		0		1		1		0		1									4	1	4							
120		1		0									0		0					0							1	0	0							
105			0																								0		0							
																															Summations:			10		15

Thickness, Mil


$N (\sum NJ) = \underline{\quad 10 \quad}$        $A (\sum INJ) = \underline{\quad 15 \quad}$   
 $W_o = \underline{\quad 120 \quad}$        $\Delta W = \underline{\quad 15 \quad}$   
 $W_F = \underline{\quad 135 \quad}$       Grams

The Failure Weight  $W_F$  of a test series is determined as follows. Values for NJ and I are taken from the test results. The number of failures at a given weight is designated as NJ. The summation of  $\sum NJ = 10 = N$ . The number of weight increments above  $W_0$  is I. By multiplying I \* NJ the term INJ is obtained. The summation of  $\sum INJ = A$ . Failure weight  $W_F$  is obtained from the following formula:

A = Sum of all INJ terms

N = Sum of all NJ terms

$$W_F = W_0 + [\Delta W(A/N - 1/2)]$$

Where:

$W_F$  = Dart Impact Failure Weight

$W_0$  = Missile Weight to which an i value of zero is assigned

$\Delta W$  = Uniform Missile Weight increment

NJ = Total number of X's at each missile weight (Do not enter value if no X's)

I = Integer: 0, 1, 2, etc. for each  $n_i$  entry. Enter 0 for lowest missile weight, 1 for next higher, etc.

INJ = Product of I times NJ