

IQI - ASTM E1742 Penetrators

ASTM E1742 penetrators have lead figures identifying the material and thickness.
2% of material's thickness to be radiographed (Small hole diameter = 1x thickness, Medium hole diameter = 2x thickness, Large hole diameter = 4x thickness).

Standard Image Quality Levels

Image Quality Levels	IQI Thickness	Minimum Perceptible Hole Diameter	Equivalent IQI Sensitivity %*
2-1T	1/50 (2%) of specimen thickness	1T	1.4
2-2T		2T	2.0
2-4T		4T	2.8

* Equivalent IQI sensitivity is that thickness of the IQI, expressed as a percentage of the part thickness, in which the 2T hole would be visible under the same conditions.

General dimensions:

Size	Length	Width
2.5" and smaller	2"	0.5"
2.6" to 8"	2.850"	1"
Over 8"	Diameter equal to 4x thickness	Diameter equal to 4x thickness (2 holes)

Group no.	Material Type
1	Aluminum (6061), Steel (1018), Stainless (304).
2	Aluminum (2014, 2024, 2219, 7075), Aluminum-bronze, Brass, Copper, Cupro-Nickel, Inconel 600, Magnesium (AZ 31B, ZK60), Monel 400, Nickel, Phosphor-Bronze.
3	Cobalt (Haynes 25, Haynes 188).
4	Hastelloy (C, X), Inconel (625, 718), Waspaloy.
5	Zirconium.
6	Titanium 6/4.

Group no.	Size Range
A	0.06" to 1.0"
B	1.1" to 2.5"
C	2.6" to 5.0"
D	5.2" to 8.0"
E	8.2" to 20.0"



Available sets: ASTM E1742

Material Type	Size Range	Group No.	Part No.
1	0.06" to 1.0"	A	QP-ASTM-E1742-1A
1	1.1" to 2.5"	B	QP-ASTM-E1742-1B
1	2.6" to 5.0"	C	QP-ASTM-E1742-1C
1	5.2" to 8.0"	D	QP-ASTM-E1742-1D
1	8.2" to 20.0"	E	QP-ASTM-E1742-1E
2	0.06" to 1.0"	A	QP-ASTM-E1742-2A
2	1.1" to 2.5"	B	QP-ASTM-E1742-2B
2	2.6" to 5.0"	C	QP-ASTM-E1742-2C
2	5.2" to 8.0"	D	QP-ASTM-E1742-2D
2	8.2" to 20.0"	E	QP-ASTM-E1742-2E
3	0.06" to 1.0"	A	QP-ASTM-E1742-3A
3	1.1" to 2.5"	B	QP-ASTM-E1742-3B
3	2.6" to 5.0"	C	QP-ASTM-E1742-3C
3	5.2" to 8.0"	D	QP-ASTM-E1742-3D
3	8.2" to 20.0"	E	QP-ASTM-E1742-3E
4	0.06" to 1.0"	A	QP-ASTM-E1742-4A
4	1.1" to 2.5"	B	QP-ASTM-E1742-4B
4	2.6" to 5.0"	C	QP-ASTM-E1742-4C
4	5.2" to 8.0"	D	QP-ASTM-E1742-4D
4	8.2" to 20.0"	E	QP-ASTM-E1742-4E
5	0.06" to 1.0"	A	QP-ASTM-E1742-5A
5	1.1" to 2.5"	B	QP-ASTM-E1742-5B
5	2.6" to 5.0"	C	QP-ASTM-E1742-5C
6	0.06" to 1.0"	A	QP-ASTM-E1742-6A
6	1.1" to 2.5"	B	QP-ASTM-E1742-6B
6	2.6" to 5.0"	C	QP-ASTM-E1742-6C

Options:

- IQI serialization.
- IQI serialization and calibration.
- IQI encapsulation.