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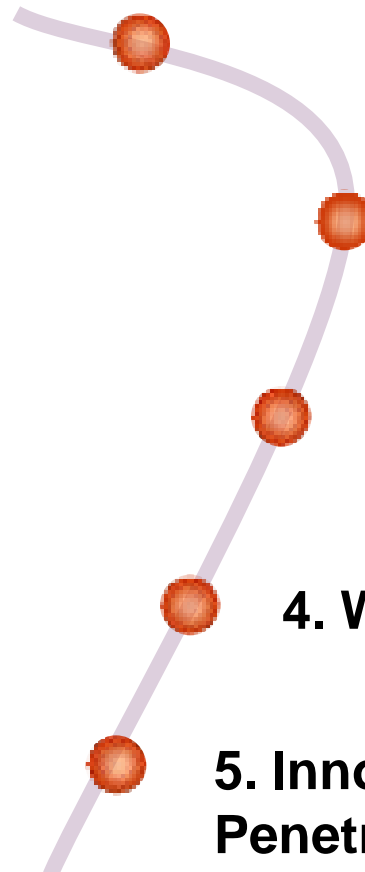
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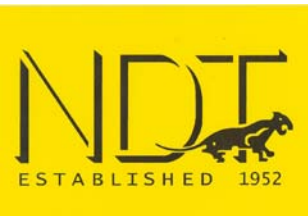
**BIG NEWS AND ATTENTION ON LIQUID
PENETRANTS, ALWAYS CONSIDERED
THE CINDERELLA OF NDT**

14 Congress AiPnD

Florence, October 26th 2011

Agenda

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- 1. New ISO 3452-5 (Liquid Penetrants “high temperatures”)**
 - 2. New ISO 3452-6 (Liquid Penetrants “low temperatures”)**
 - 3. “ETR” Liquid Penetrants (Extended Temperature Range)**
 - 4. White developers low and high temperatures**
 - 5. Innovation in Safety: Water Based Liquid Penetrants, Developers and Removers/Cleaners**



New ISO 3452-5 (LP “high temperatures”)

NDT with Liquidi Penetrants at temperatures > 50°C

Standard Conditions

- Temperature range from 10 C to 50 C (EN ISO)
- Temperature range from 40 F to 125 F (5 C and 52 C) (ASME)

New UNI EN ISO 3452-5 2009 :



UNI EN ISO 3452-5:2009

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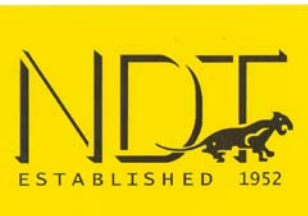
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PROCEDURE FOR QUALIFICATION

Qualification tests are performed by the manufacturer and, if the products are used within the stated range, no further tests on site are required.

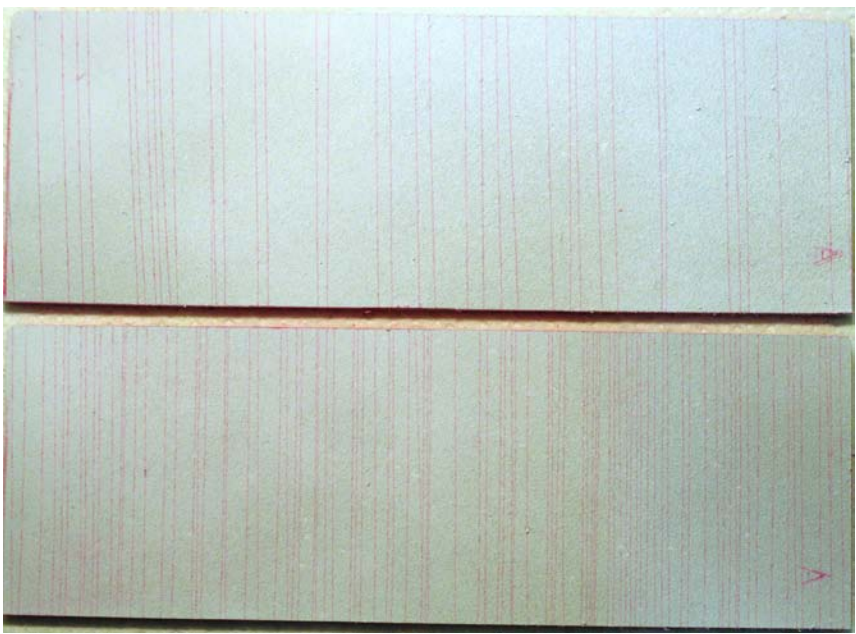


“ETR” Liquid Penetrants (Extended Temperature Range)

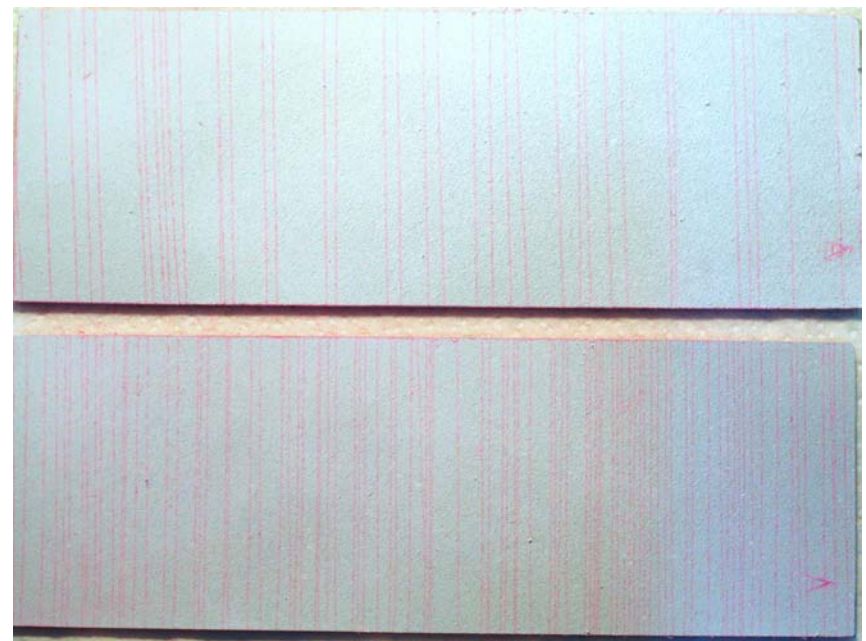
Performed Qualification Tests (Ref. Block Type 1 ISO 3452-3)

Red Liquid Penetrant Elite K71HT is qualified “ IIACcde - 2/10 C- 200 C ”

At 10 C 50 micron



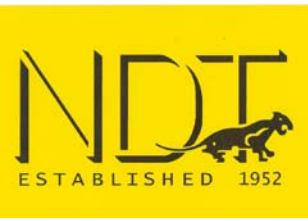
At 50 C 50 micron



At 10 C 30 micron

At 50 C 30 micron

Red Liquid Penetrant High Temperatures Elite K71HT, with White Developer Elite D200 and Bio Remover/Cleaner Elite RHT are qualified sensitivity level 2 (maximum)

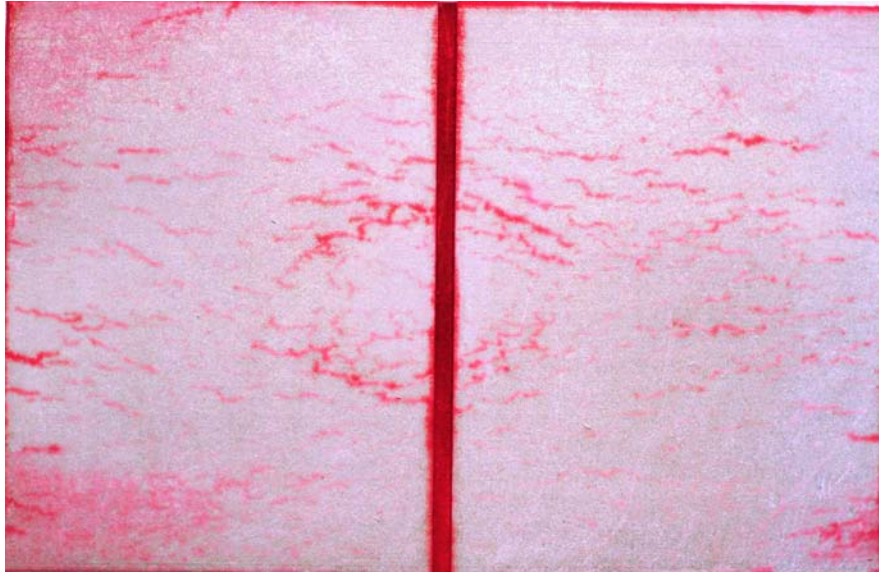


“ETR” Liquid Penetrants (Extended Temperature Range)

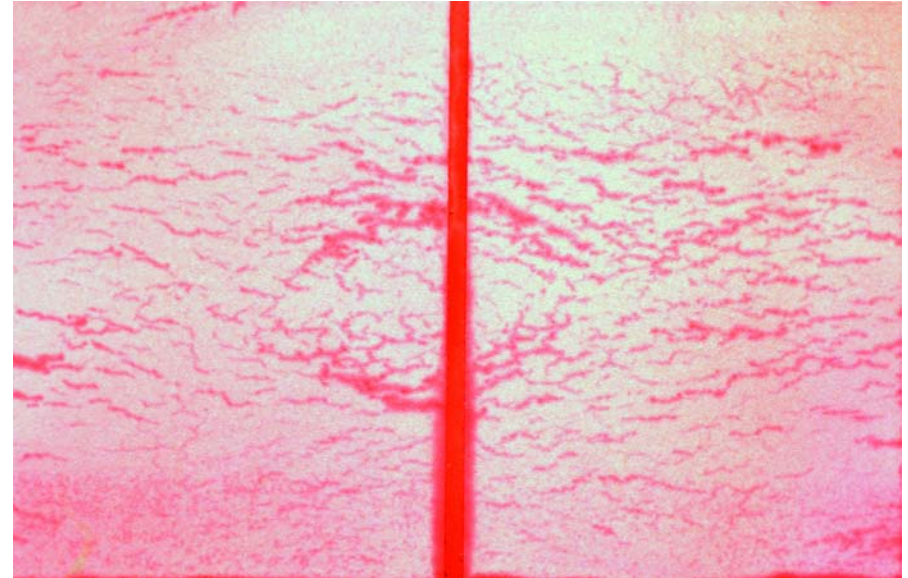
Qualitative Evaluations: The aluminum reference blocks (ASME)

Red Liquid Penetrant Elite K71HT is qualified “ IIACcde - 2/10 C- 200 C ”

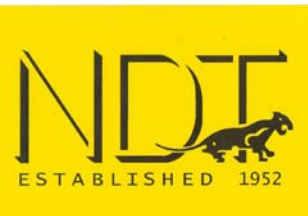
Temperature 10 C



Temperature 200 C



Red Liquid Penetrant High Temperatures Elite K71HT, with White Developer Elite D200 and Bio Remover/Cleaner Elite RHT are qualified for use from 10 to 200 C



New ISO 3452-6 (LP “low temperatures”)

NDT with Liquid Penetrant at temperatures $< 10^{\circ}\text{C}$

Standard Conditions

- Temperature range from 10 C to 50 C (EN ISO)
- Temperature range from 40 F to 125 F (5 C e 52 C) (ASME)

New UNI EN ISO 3452-6

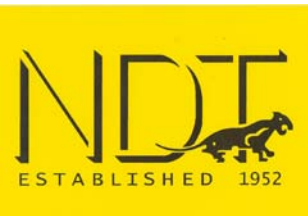
3 Low temperature penetrant testing

3.1 General principles

The general principles of ISO 3452-1 shall apply unless otherwise stated in this part of ISO 3452 or in the manufacturer's instructions.

Qualification tests are carried out by the manufacturer and if products are used within the stated range, no further tests are needed on site.





“ETR” Liquid Penetrants (Extended Temperature Range)

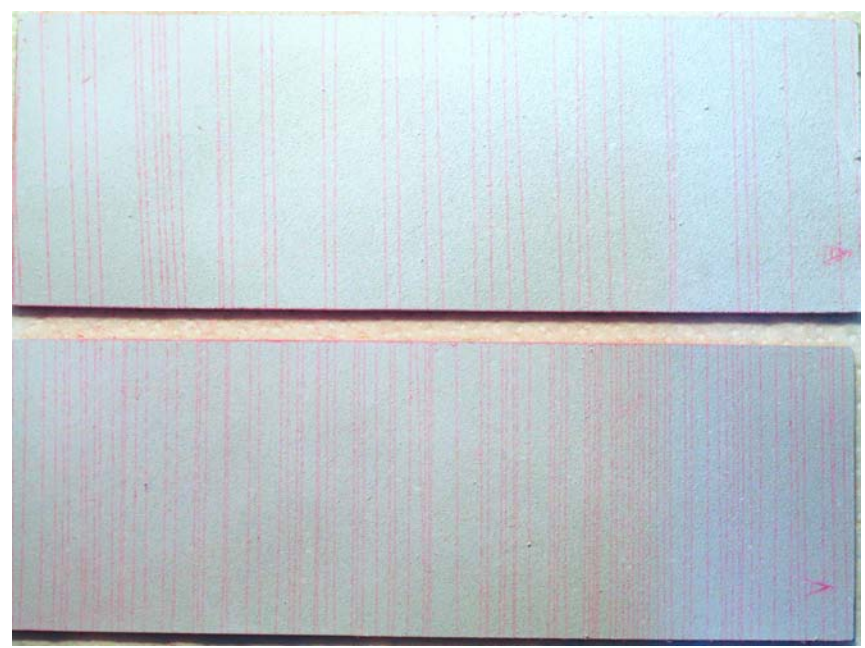
Performed Qualification Tests (Ref. Block Type 1 ISO 3452-3)

Red Liquid Penetrant Elite K71B2p is qualified “ IIACcde - 2/0 C- 100 C ”

At 0 C 50 micron



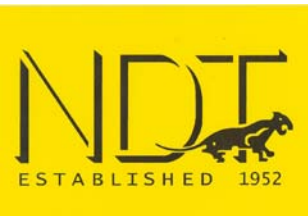
At 100 C 50 micron



At 0 C 30 micron

At 100 C 30 micron

Red Liquid Penetrant Elite K71B2p, with White Developer D112A and Bio Remover/Cleaner BC1 are qualified for use from 0 to 100 C



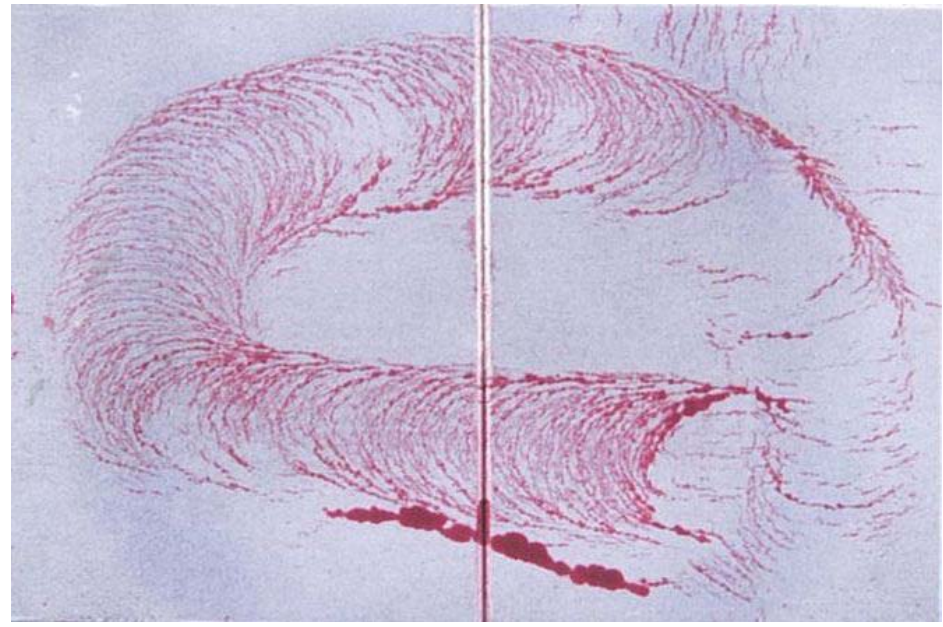
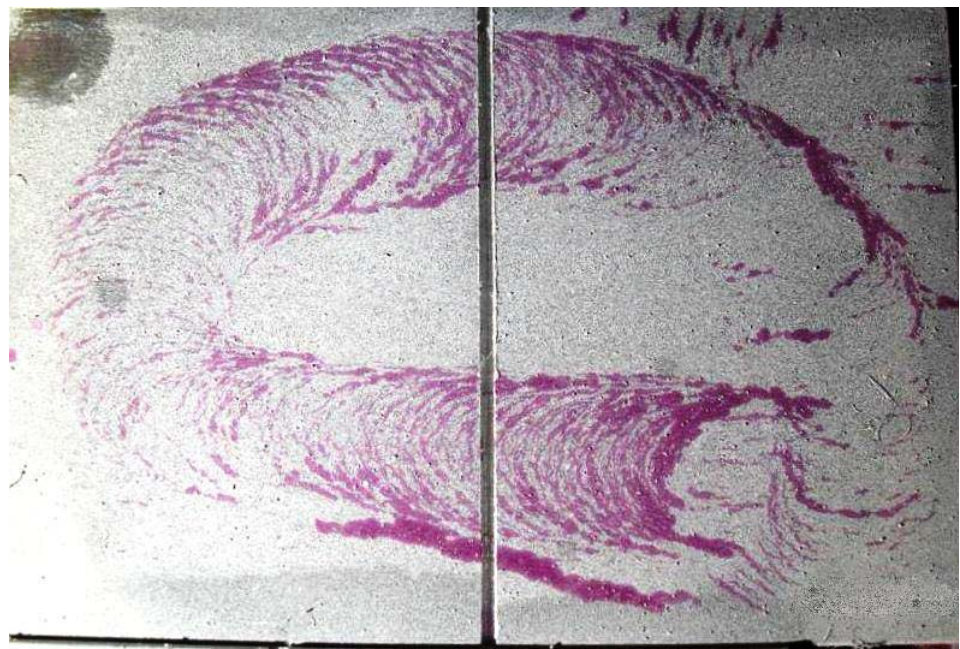
“ETR” Liquid Penetrants (Extended Temperature Range)

Qualitative Evaluations: The aluminum reference blocks (ASME)

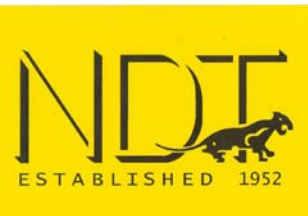
Red Liquid Penetrant Elite K71B2p is qualified “ IIACcde - 2/10 C- 100 C ”

Temperature 0 C

Standard Temperature (>10 C)



Red Liquid Penetrant Elite K71B2p, with White Developer D112A and Bio Remover/Cleaner BC1 are qualified for use from 0 to 100 C



White developers low and high temperatures

UNI EN ISO 3452-2 point 6.15; ASTM E1418 Par. 7.1.7.2

- From 0 C to 100 C:
 - Use Developers form d,e (non-aqueous solvent based type)

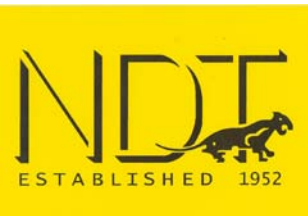
- From 80 C to 200 C:
 - Use Developers especially formulated for high temperatures (e.g. Elite D200) or form c developers (water-based)

UNI EN ISO 3452-2:

6.15 Developer performance

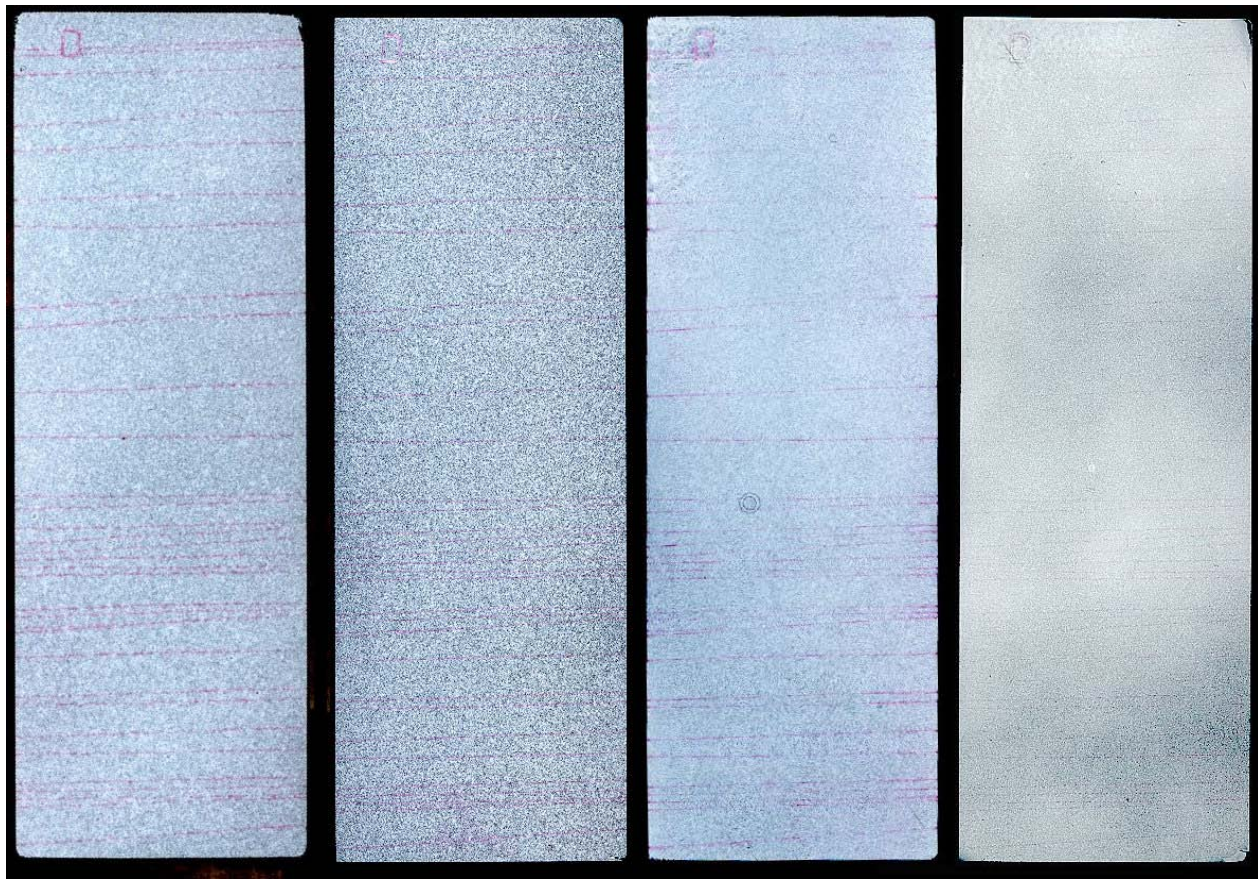
When applied according to the manufacturer's recommendations, the developer shall give a fine, even, non-reflective and non-fluorescent coating. When used in conjunction with the appropriate penetrant, the developer shall increase the visibility of the penetrant indications.



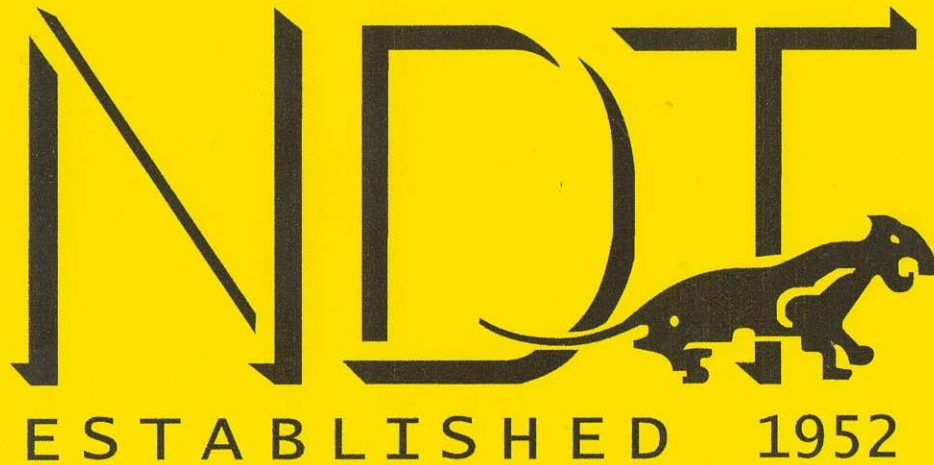


Innovation in Safety: Water-Based Liquid Penetrants, Developers and Removers/Cleaners

Performed Qualification Tests (Ref. Block Type 1 ISO 3452-3)



Red Liquid Penetrant Elite K71B2.bio, with water-based White Developer DWS2 and Non-flammable Bio Remover/Cleaner Elite20, compared to other “traditional” oil-based penetrants



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Facebook Group "NDT Italiana"

Maurizio Cevenini

Michele Cevenini

***NDT ITALIANA Proudly Supports Beat Leukemia ONLUS www.beat-leukemia.org
"The difference between difficult and impossible is that impossible takes longer.
Miracles just require faith"***