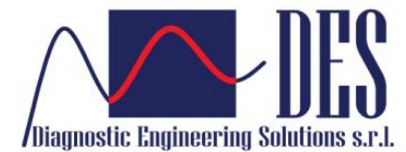


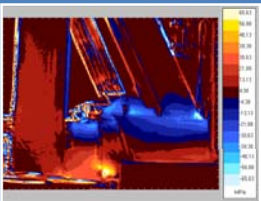
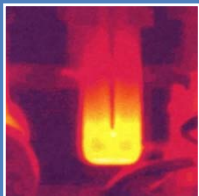
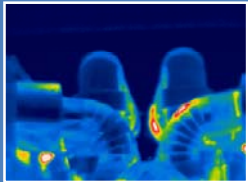
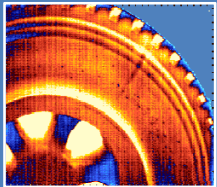
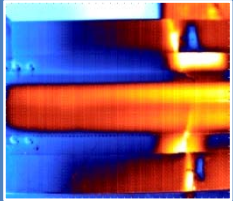
Controlli non distruttivi su coating



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NDT SU COATING



Le tecniche di controllo non distruttivo più utilizzate attualmente per l'analisi dei rivestimenti sono:

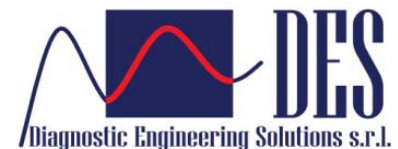
- ultrasuoni;
- liquidi penetranti;
- correnti indotte;
- ispezione visiva.

La **TERMOGRAFIA** presenta diversi vantaggi nel controllo non distruttivo per i rivestimenti superficiali:

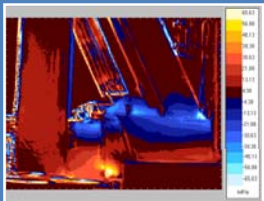
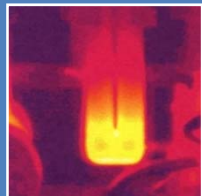
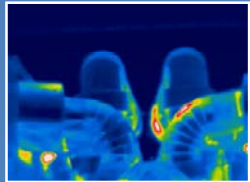
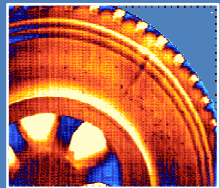
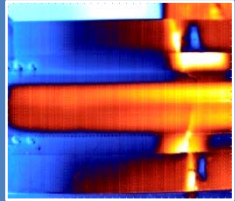
- ispezione di aree relativamente ampie in tempi relativamente brevi;
- nessun contatto con il componente ispezionato
- ottima risoluzione spaziale;
- facile interpretazione delle immagini processate;
- risoluzione di difetti dell'ordine del decimo di millimetro;
- Rilevamento di difetti superficiali e subsuperficiali.



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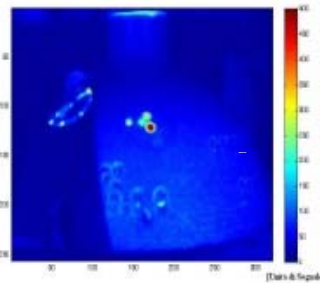
ANALISI TERMOGRAFICA DI COMPONENTI VERNICIATI E RIVESTIMENTI FUNZIONALI



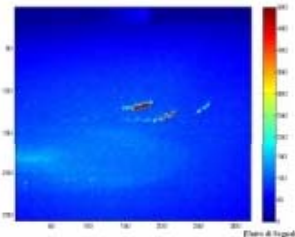
Analisi qualitativa di tracce di usura abrasiva in rivestimenti epossidici micrometrici



Individuazione di difetti su vernici: sporcizia all'interfaccia substrato - vernice



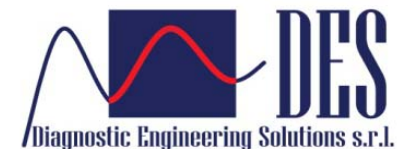
Indagine di omogeneità di rivestimenti su componenti in pressione



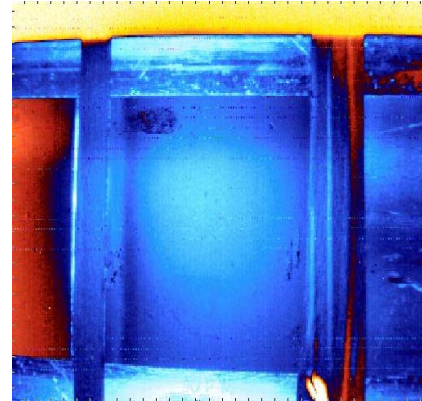
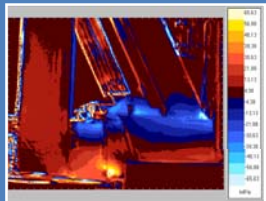
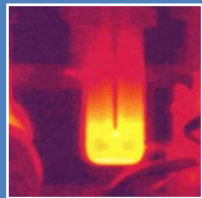
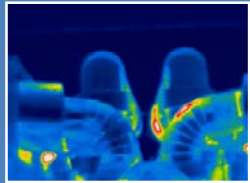
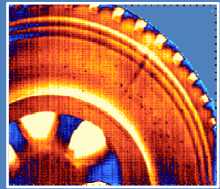
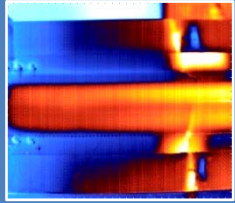
Individuazione di difetti su vernici: raschi su serbatoio in pressione



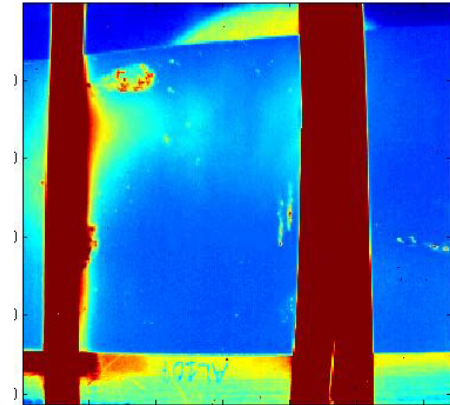
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VERNICIATURE



Analisi con Tecnica
Pulsata (PT)

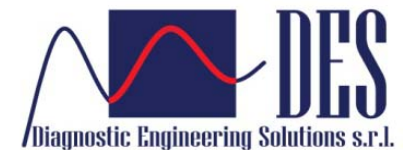


Analisi con Tecnica
LOCK-IN (LT)

Possono essere ispezionati pannelli di vario materiale con più strati di vernice, individuando con precisione imperfezioni sulla superficie e nello spessore dello strato

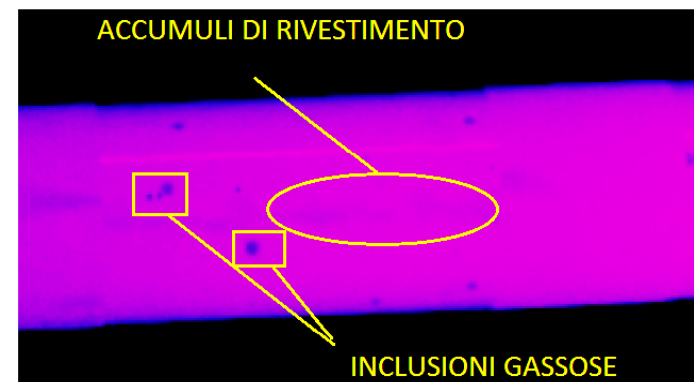
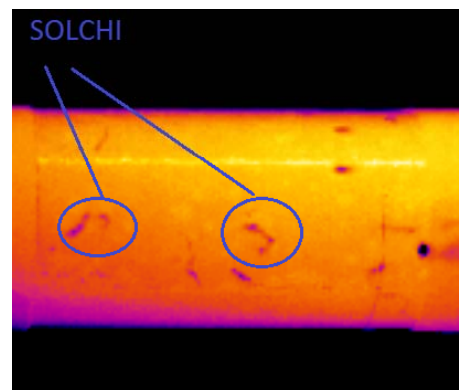
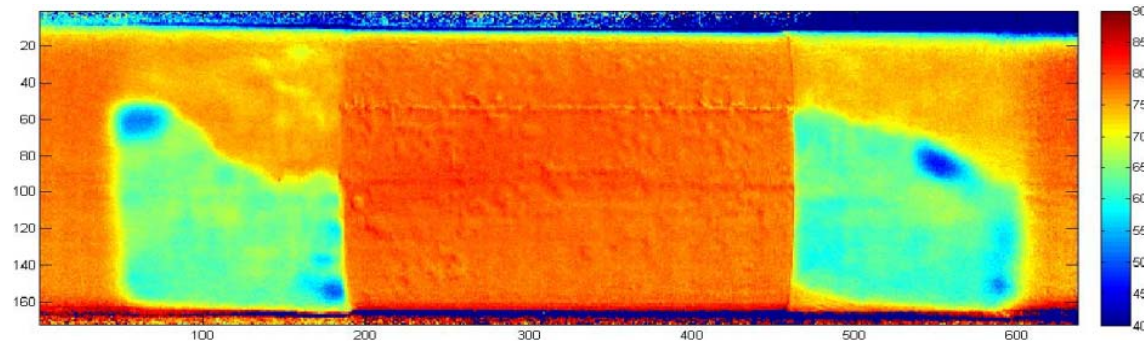
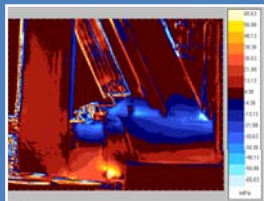
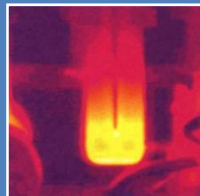
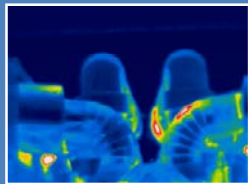
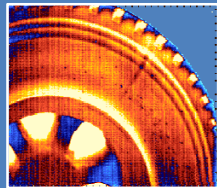
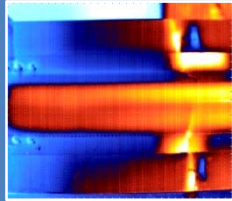


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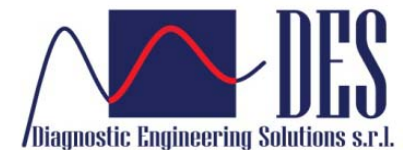


RIVESTIMENTI EPOSSIDICI

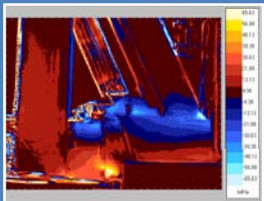
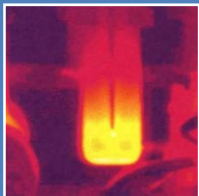
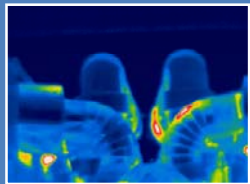
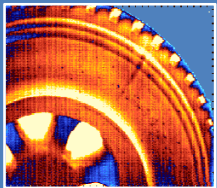
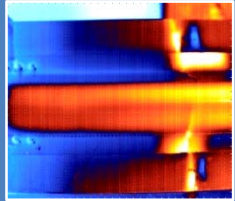
Le metodologie di controllo DES riescono ad individuare chiaramente i difetti di rivestimento epossidico applicato su ferro, come solchi nel rivestimento, accumuli di materiale e inclusioni gassose.



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BARRIERE TERMICHE PER PARTI CALDE DI TURBINE A GAS



Turbine blade with a thermal barrier coating.

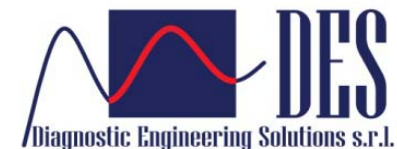
Analisi di integrità e adesione di rivestimenti metallici e ceramici (barriere termiche) per le parti calde delle turbine a gas.

In questo tipo di controlli, la termografia presenta vantaggi rispetto alle tecniche ultrasonore :

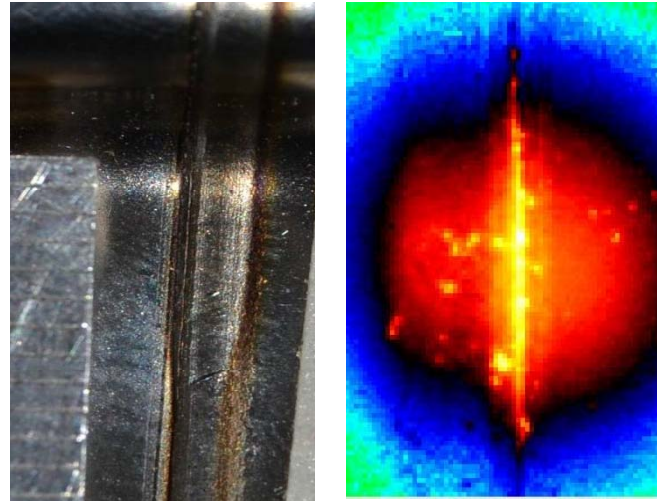
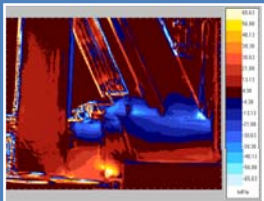
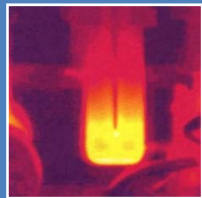
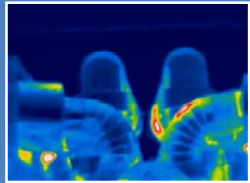
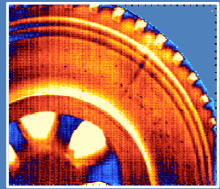
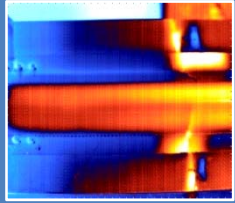
- nessun contatto tra sonda e componente (o l'immersione in acqua);
- tempi brevi per una scansione di ampie aree;
- possibilità di ispezionare rivestimenti ceramici (la diffusione delle onde ultrasonore è molto penalizzata per la porosità tipica del materiale).



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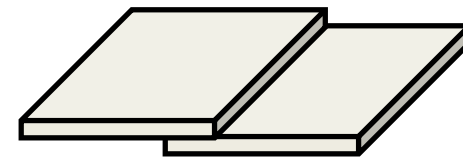


ANALISI TERMOGRAFICA DI GIUNTI SOTTILI SALDATI



Anomalie all'interno e all'estremità del cordone di saldatura (effetto blackbody)

Controllo non distruttivo dell'adesione di lamiere metalliche sottili in una giunzione saldata di tipo lamiera su lamiera.



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