

# VISUAL TESTING



**TOMTEC NDT MARINE SERVICES PTE LTD**

**VISUAL TESTING** is the observation, either directly or indirectly (remotely), of a specimen by an Inspector in such a fashion as to determine the presence or absence of surface discontinuities or irregularities. VT should be the first Non-Destructive Testing method to be applied to a specimen. Other NDT methods may or may not be required after VT.

The procedure is usually quite simple. It has developed into a multitude of difficult and elaborate optical investigation techniques. Some optical examinations are based upon simple laws of geometrical optics. Others depend upon rather complicated properties of light, such as wave characteristics.



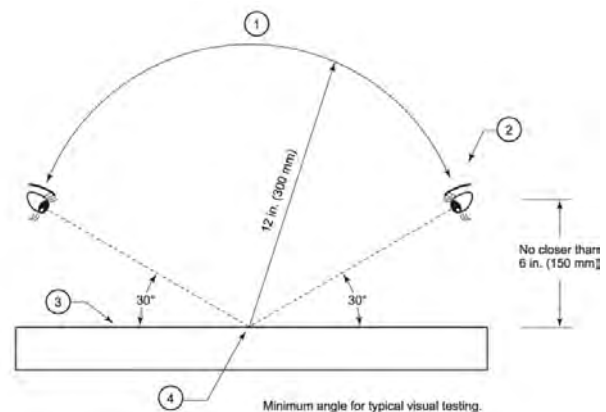
When Direct Visual Examination is not possible, Remote Visual Inspection may be required using visual aids such as mirrors, borescopes, videoscope, fibre optic cables or cameras shall be considered when the access for testing is not possible or when specified by an application standard.

Borescopes, Videoscopes and Fiberscopes are widely used for examining tubes, deep holes, long bores, and pipe bends, which have internal surfaces which are not accessible to direct viewing. They allow close and evenly magnified examination of internal surfaces for

discontinuities. They can be used to view straight on or at various angles. Where the result of visual testing is inconclusive, the visual test should be supplemented by other nondestructive testing methods for surface inspections.

## TOMTEC Provides visual inspection services for

- ✓ Castings, Forgings
- ✓ Pipes and pipelines
- ✓ Structures
- ✓ Pressure vessels
- ✓ Boilers
- ✓ Storage tanks
- ✓ Power plants



**Key**  
1 viewing angle range  
2 eye  
3 test surface  
4 test site

Figure 14—Direct Visual Examination Requirements

🏠 48 Toh Guan Road East, #08-127, Enterprise Hub, Singapore 608586  
☎ Tel: (65) 62624462 Fax: (65) 64681995  
✉ Email: tomtecmarine@tomtecdnt.com  
🌐 Website: <http://www.tomtecdnt.com>

# VISUAL TESTING



**TOMTEC NDT MARINE  
SERVICES PTE LTD**

## Advantages

- ✓ Save money – if there is an obvious flaw that can be seen by the naked eye, there is no need to take the time and resources to continue the inspection process
- ✓ Inexpensive
- ✓ Highly portable
- ✓ Immediate results
- ✓ Minimum training
- ✓ Minimum part preparation
- ✓ Easy to understand and explain
- ✓ Readily used on almost all materials
- ✓ Can occasionally reveal patterns or anomalies in the data
- ✓ Direct viewing is carried out by humans so little maintenance is required
- ✓ Completed on a 'real-time' basis. Direct viewing provides an instant output to the viewer
- ✓ Cameras can zoom in on critical areas at any angle, enhancing the accuracy of the inspection



Direct visual inspection applies proper lighting, measurement, and comparative tools with the experience of our qualified technicians to determine design compliance and conformance to drawings, codes and specification requirements [E.g. AWS D1.1, BS EN 1370, BS EN ISO 17637, ASME B31.1, ASME B31.3, ASME Section VIII Div. 1, ASTM A802, ASTM A997, etc.].

🏠 48 Toh Guan Road East, #08-127, Enterprise Hub,  
Singapore 608586  
☎ Tel: (65) 62624462 Fax: (65) 64681995  
✉ Email: [tomtecmarine@tomtecdnt.com](mailto:tomtecmarine@tomtecdnt.com)  
🌐 Website: <http://www.tomtecdnt.com>