Near Vision Requirements

Presentation complied by UK NANDTB
Background

- EN4179:2005 required near vision acuity to Jaeger No. 1 or equivalent, not less than 30cm/12 in in at least one eye, natural or corrected.

- Vision acuity in EN4179:2009 changed to 20/25 (Snellen) at 16” (42cm) +/- 1” (2.54cm) or equivalent in at least one eye, natural or corrected.

- There are methods other than Snellen for examining near vision eyesight acuity and there is considerable debate even within the medical field as to “equivalency” of vision requirements.

- Responsible Level 3’s will find it difficult to obtain clearly defined supporting medical evidence regarding the equivalency of vision requirements.

- The numerous potential avenues for equivalency provides scope for variation and error.
Acceptable Equivalents

Jaeger Chart
- #1 @ ≥12”

Point Chart
- N4 @ ≥16”

FAA 8500-1

Other ‘Snellen’ 16” charts

Sloan Characters
- ‘Sans Serif’ font

Potential Others

BS4274-1 (2003)

ISO8596 (2009)

Distance reading standards
Not suitable for near vision
Global Standard

An agreed global standard for NDT personnel would eliminate the problems of variation and mitigate the risk of error. A standardised solution is required taking the following essential attributes into consideration:

- Optotype
- Optotype size based upon 5 minutes of arc
- Optotype spacing
- Eye to optotype distance
- Illumination
- Acceptance criteria
- Use of both eyes (as used for inspection)
UK NANDTB Policy

- Single Option: Visual acuity tests to be carried out:
  - Using the UK NANDTB chart and NANDTB/20
  - Using the actual eye-wear used in the inspection process
    - Note: This includes corrective lenses and/or eye protection as normally used.

- “Equivalents” not permitted within UK jurisdiction
- Existing certification valid until expiration
- Responsible Level 3 accountable for training and delegations
  - Note: No Medical/Optical alternative test permitted (eg Optometrist Standard tests)

- Functional NEAR VISION Acuity Test
  - Not for colour vision
  - Not medical examination
    - Employers should consider this separately – as for VDU operators etc
**The Test Chart**

**NDT Near Vision Acuity Test**

To be administered at a minimum distance of 400mm using white light of >500 Lux, using both eyes and with prescription lenses as used for inspection purposes.
Test Procedure

OUTLINE:

1) Train/delegate personnel who will administer test
2) Download/Print Chart and verify quality – keep secure
3) Use one block of “E”s - better quality block
4) Verify illumination level
5) Ensure normal eyewear is used
6) Set distance 400±25mm
7) Establish the responses to be used
8) Administer test – candidate using both eyes together
9) Start at Line 1 working left to right and moving down lines
10) Acceptance Level is 5 out of 5 up to & including line 9
ADVANTAGES

- Is Universal - No language/alphabet dependency
- Based on vision acuity - not reading ability
- Based on resolution of 6 mins of arc - as 20/25 Snellen
- Can be administered locally
- Directly controlled by Responsible Level 3
- Basically “fail safe”
- Administered under defined conditions
- Auditable
- Based on accepted scientific principles (eg BS 4274-1, ISO 8596)
- Can be carried out in inspection area
- May be carried out in conjunction with annual appraisal