A Brief Guide to the European Standards for Eye Protection - EN166
All manufacturers of safety eyewear are required to have their products independently tested against a European standard. Firstly it is important to remember that both the Frame and Lens are tested, therefore both must include the CE symbol and the manufacturer's logo. The CE marking certifies that a product has met EU consumer safety, health or environmental requirements.

Frame Markings
The frame will usually be marked on the inside of both arms. All safety frames must pass the European EN166 standard. This is a higher standard that the US or Asian equivalent and is considered the baseline for safety eyewear. If EN166 is not stamped on the frame then it may be advisable to look elsewhere. Next will be numbers and/or letters which indicate to what degree the frames passed the EN166 test within various categories.

Shape or design of the frame
• 3 - Protect against liquid droplets and splashes. This is usually only found on goggles where a full seal is made around the eyes.
• 4 - Protect against large dust particle over 5 microns in size.
• 5 - Protect against dust and fine dust particles smaller than 5 microns.

Strength of the frame
• S - withstand impacts against small objects travelling up to 12 meters per second
• F - withstand impacts against small objects travelling up to 45 meters per second
• B - withstand impacts against small objects travelling up to 120 meters per second
• A - withstand impacts against small objects travelling up to 190 meters per second
• T - withstand impacts at extreme temperatures

A frame can have a combination of these markings.

Lens Markings
Unlike the frame, lenses can meet various safety standards including EN166, 169, 170 & 172. For obvious reasons the manufacturers are not required to print every standard on the lens but simply the degree to which they meet the standard. Using the guide below you can determine which standards they meet. Once again the manufacturers seal and the CE mark are mandatory. In addition will be a degree of solar or UV radiation protection, the optical
quality and then the mechanical strength.

Radiation Protection
• 2 - UV Protection (EN170). The number 2 indicates the filter may effect colour recognition
• 2C or 3 - UV Protection (EN170). The number 2C (previously 3) indicates the filter allows good colour recognition
• 4 - Infrared Protection (EN171). i.e. protection from heat
• 5 - Solar Protection (EN172). i.e. 100% UV sun glare protection - with no infrared (IR) protection
• 6 - Solar Protection (EN172). i.e. 100% UV sun glare protection - with infrared (IR) protection

Lens Shading
• 1.2 - Allows more than 74.4% light transmission, but less than 100%
• 1.7 - Allows more than 43.2% light transmission, but less than 58.1%
• 2.5 - Allows more than 17.8% light transmission, but less than 29.1%
• 3.1 - Allows more than 8.0% light transmission, but less than 17.8%

Optical quality
• 1 - Class 1 High optical, quality suitable for regular use. Refractive power of ± 0.06 dioptres.
• 2 - Class 2 Medium optical, quality suitable for occasional use. Refractive power of ± 0.12 dioptres
• 3 - Class 3 Low optical, quality suitable for exceptional use. Refractive power of ±0.25 dioptres

Strength of the lens
• F - withstand impacts against small objects travelling up to 45 meters per second
• B - withstand impacts against small objects travelling up to 120 meters per second
• A - withstand impacts against small objects travelling up to 190 meters per second
• T - withstand impacts at extreme temperatures.

A Brief Guide to STANAG 2920 (STANAG = NATO Standardization Agreement)
STANAG 2920 is used to measure a materials ability to stop fragments and shrapnel and products are tested according to relevant NATO standards. The measuring technique is used in all situations where fragments are a concern and velocities tend to be far higher than the standard EN166 test. This is an internationally recognised standard for assessing the fragmentation resistance of personal protective equipment.

Tests to STANAG 2920 are conducted by shooting FSPs (Fragment Simulating Projectiles) at the test sample at different velocities. Each FSP velocity is recorded. By altering the velocities, an estimate of the ballistic tolerance can be calculated, which is the speed up to which the material defeats incoming fragments.

EOD Stealth performance eyewear has undergone independent STANAG 2920 V50 testing.