

# Revised British standards

**T**hree revised British Standards relevant to optometric practice were published last year. The first is the second edition of BS EN 13666, which is the vocabulary for spectacle lenses. For the reader's convenience, this edition brings in several definitions from the ISO focimeter and spectacle frame standards. Thus one of the important terms in spectacle dispensing, copied from BS EN ISO 8624: 2011 on spectacle frame measuring system and terminology, is face form angle. This is the angle in the horizontal plane between the plane of the spectacle front and the plane of the left or right lens shapes. A note advises the reader that the average of these two angles is usually given. This angle has also been variously denoted in spectacle lens literature by wrap angle or dihedral angle (Figure 1).

The revised standard also includes the 'as-worn' pantoscopic angle, being the angle in the vertical plane between the visual axis when the eyes are in the primary position and the normal to the demonstration lens in the frame at its boxed centre.

This angle should not be confused with the angle of side, which confusingly is known in the US as the pantoscopic angle – it is hoped that the US will rename this as the 'frame pantoscopic angle' to differentiate it from the lens angle.

When the lens power that is to be manufactured is adjusted to compensate for either or both of these two angles, or for changes in vertex distance, the resulting power is termed the 'as-worn' corrected dioptric power.

A few months before publication, the ISO spectacle lens group decided that a better name would be, more simply, 'compensated power', but sadly the ISO editors did not change this in the published edition despite a request.

It will, however, be changed in the next edition, so the BSI spectacles committee recommends that the term 'as-worn compensated power' be used straight away. This power is printed on lens packets when compensation has been made, and it is to this power that the lens tolerances apply.

The term 'measured power' is

**Ronald Rabbetts** explains some recent changes to the British Standards relevant to all who are involved in verification



**Figure 1** Face form angle

already defined as the power of the actual lens, rather than what is intended to be made. Terms relating to degressive-power lenses and coatings are among those which have also been added.

A second vocabulary document, BS EN ISO 4007, the vocabulary for eye and face protection, replaces BS EN 165, on which it was based. Many of the definitions in the older standard have been improved and some of the optometric ones corrected.

The sharp eyed reader of BS EN ISO 13666 and BS EN ISO 4007 may notice that, although there is no significant difference in the equations for items such as UV transmittance, the wording of the definition in the eye and face protection standard is better. It is hoped to align the wording in the spectacle lens standard during its next revision, but the remit for the edition just published did not allow this.

The working groups of the ISO eye and face protection committee were reactivated in 2003, and BS EN ISO 4007 is the first resulting standard to be published. The general purpose sunglass standard, together with its test method standard, will hopefully be published this year.

## Physiological compatibility

The third edition of BS EN ISO 12870 on spectacle frame requirements and test methods was also published last year. The main

changes from the previous edition are in the section on physiological compatibility, which includes a more detailed description on testing for nickel release against the requirements of REACH (the EU regulation covering the Registration, Evaluation, Authorisation and Restriction of Chemicals) and procedures for evaluating other frame materials, colourings and coatings.

There is a paragraph reminding the manufacturer or the importer into the EU that it is their responsibility to ensure that the spectacle frame model complies with the Essential requirements of the Medical Device Directive (MDD), not only when the frame model is first manufactured but also in subsequent production.

Although BS EN ISO 12870 does not have to be used for this purpose, compliance with its clauses is the simplest way to demonstrate compliance with the MDD.

On this point, the Federation of Manufacturing Opticians reports the problem of practices purchasing spectacle frames of inadequate quality for glazing, and expecting a laboratory to glaze them. Although it may be possible to glaze a lens initially, will it stay in the frame and will the frame maintain its shape, items both covered in BS EN ISO 12870?

Although the frames may bear a CE mark, the BSI spectacles committee strongly suspect that some Far Eastern manufacturers put this on products without either testing or realising the requirements of the Medical Device Directive. With many foreign exhibitions in Europe or the US, it is easy to purchase frames direct from manufacturers without going through responsible European based wholesalers.

These British Standards may be obtained from BSI (<http://shop.bsigroup.com>), while members of The College of Optometrists may obtain them through the College Website's Library section. ●

● Ronald Rabbetts has retired from private practice