EinDfA TC NEWS #6/2018

Dear members and friends of the International Ergonomics Association (IEA) Ergonomics in Design for All Technical Committee,
Welcome to our second year and sixth newsletter!

Promoting Ergonomics in Design for All is a core activity of our EinDfA TC and on the **occasion of IEA2018 we are including a topic on standards.**

If you have any news on conferences, publications or standards, let me know **by the end of June** for the next newsletter.

You can find information about objectives, domains of interest, members of the TC here:
http://www.iea.cc/about/technical.php?id=56d641e4ddc48

I wish you good work,
Isabella T. Steffan
IEA Ergonomics in Design for All - TC chairperson

20th INTERNATIONAL ERGONOMICS ASSOCIATION CONGRESS IN FLORENCE August 26th-30th 2018

The Italian Society of Ergonomics/Human Factors is pleased to host in 2018 in Florence, Italy, the 20th international IEA conference. The theme of the congress is “Creativity in Practice”, with reference to the typical challenge of the Italian way to innovation engaged to transform the results of research on innovation in concrete actions to improve the quality of life and work.
The event will be not only an occasion to share new researches and case studies on Design for All/Universal Design, but also an occasion to meet professionals from different countries.

The proceedings (and, thus, all the contributions) will be published by Springer. The publications will be referenced by SCOPUS and World of Science.

There have been many abstracts submitted on Design for All-Universal Design, which is a transversal design approach that is developing interesting synergies and practical results within Ergonomics. Papers have to be submitted by the end of April.
Apart of a parallel session on Ergonomics and Design for All we have planned a Special Session on “International Standards on Accessibility and Design for All. Background and Evolution”.

For registration and submission, see: www.iea2018.org

We are waiting for you!

TECHNICAL INFORMATION

STANDARDS UNDER DEVELOPMENT IN TC159 “ERGONOMICS” ERGONOMICS. ACCESSIBLE DESIGN. A METHOD FOR ESTIMATING MINIMUM LEGIBLE FONT SIZE FOR PEOPLE AT ANY AGE (ISO 21055)

by Ken Sagawa, Project leader of ISO21055, TC159/SC4

Legible font size is always an issue when designing visual signs or documents. Small letters in near viewing distance, like reading newspapers, instruction manuals, watching public signs of too many letters etc., are difficult to read for older people. This draft standard tries to establish a method to estimate legible font size at any viewing condition in which four major factors affecting visual acuity, i.e. age, viewing distance, luminance level, and contrast, are variably changed.

The method is based on a simple empirical formula using three variables mentioned above (age, distance, and luminance) and two parameters that change with font type (serif or sans-serif), and furthermore a contrast correction is taken into account to obtain a final solution.

The complexity of fonts or symbols may affect, but this standard only deals with simple alpha-numeric letters currently.

Figure 1 illustrates the procedure to calculate a minimum legible font size for an example of the viewing condition, age 70 years, distance 50 cm, luminance 50 cd/m2, and contrast 60 %. The first three variables give us a minimum legible font size of 14.7 point at the first step of calculation, and then the contrast correction applies to get a final solution of 18.1 point. An exact method together with necessary data tables is described in the standard. This size is calculated for a serif font in positive contrast which is one of the most popular viewing conditions. If a sans-serif font is used, the calculated size will be smaller as sans serif font is generally regarded more legible than serif font. For a quick estimation of the minimum legible font size, this standard offers in an Annex the calculated results as a function of viewing distance and age for some typical condition of luminance and contrast. Figure 2 is an example for the 100 cd/m2 luminance and the 100 % contrast. One can easily estimate a font size from this figure for any combination of age and viewing distance, and applying a contrast correction, the final result will be obtained. The data are provided for five luminance conditions of 1000, 100, 10, 1, and 0.1 cd/m2. It should be noted that the estimated font size is the size at "minimum legible level" which means, in definition in the standard, 80 % of people are able to identify the letters. This level is not "a comfortable level". In an Annex, the standard gives a scale of legibility where one can choose a multiplying factor for various levels of legibility such as very good, good, moderate, poor, very poor depending on the context of use. For moderate level, the 50% larger size is required, that is 18.1 point will be 27.2 point in above example.

The standards is now at the registration of DIS and the voting is to be done in 2018.

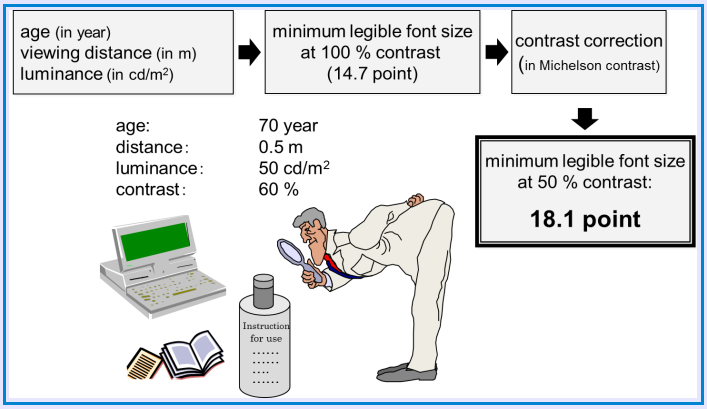

Figure 1 Procedure for estimating minimum legible font size in ISO21055

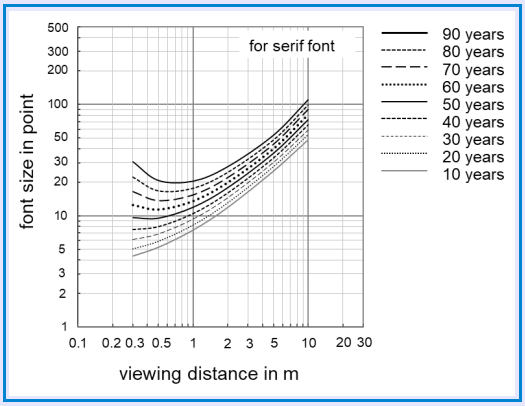

Figure 2 A calculation example of minimum legible font size for a condition of 100 cd/m2 luminance and 100 % contrast (for serif font)