soundservices.co.uk
Sound Services, 43 Albany Road, Fleet, Hants, GU51 3PU, UK
phone: 01252 620227
fax: 01252 627505
email: sales@soundservices.co.uk
www.soundservices.co.uk
www.soundservices.org.uk
VAT: 479 7742 77

Induction Loop Systems for the Hard of Hearing

Induction loop systems are used to assist the hearing impaired by transmitting amplified sound, ie: music & speech etc., to NHS and other hearing aids. Demand for induction loops is increasing due to new legislation aimed at preventing discrimination against disabled people. This document provides a brief summary of all new and existing legislation/standards relating to induction loop systems and their installation.

Induction Loops

In order that the hard of hearing may benefit from sound distribution, it is necessary that they have a hearing aid fitted with a 'T' (Telecoil) switch. This would normally allow ease of use of a telephone. Most modern aids will have this facility inbuilt, no switch being required. Basically, the loop system operates as the primary of a large transformer, creating an electromagnetic field around the site to be covered. Each individual aid would then effectively become a secondary within this field, receiving the signal and transforming it into sound for the user.

Some calculations are needed so as to meet the requirements of BS7594, which governs these installations. The calculations are a little involved and include length and width of the area, together with the required field strength, in order to determine the loop current. The calculation also varies somewhat with the differing shapes of sites. Then, the cable diameter will be determined, taking into account the total loop size, loop resistance and current rating. It is felt that these calculations are beyond the scope of this text. However, most manufacturers and suppliers offer a design service for loop installations.

Uses for induction loops include churches, banks, service counters, schools, theatres, meeting rooms, waiting rooms, etc. They may be installed as a stand-alone unit, e.g. in a bank, or as a 'slave' to an existing PA system, e.g. in a theatre.

The loop itself will usually consist of a single turn conductor around the listening area. Care must be taken not to run the loop parallel to existing wiring, conduit or piping, since these will all be regarded by the system as suitable 'secondaries', each absorbing considerable amounts of the radiated signal.

The calculations will also take into account the fact that it is generally undesirable to site the loop too near to 'ear' height as this may well produce overloading to a listener physically close to the loop. Usually, the loop will be sited around 1 metre above or below the listening plane. This could be in a false ceiling or perhaps around a skirting board.

Follow the manufacturer's setting up procedure closely, paying attention to detail, since any digression may result in a system which fails to meet the users expectations. In the absence of a field strength meter or loop test receiver, simply organise the aid of a hard-of-hearing member of the public. They will soon advise if levels are incorrect!

Induction Loop Legislation

BS8300 (2002) British Standard BS8300 is the new code of practice for the design of new buildings and their approaches to meet the needs of disabled people. The standard states that 'a hearing enhancement system, using induction loop, infrared or radio transmission, should be installed in rooms and spaces used for meetings, lectures, classes, performances, spectator sports or films, and used at service and reception counters where the background noise level is high or where glazed screens are used' (9.3.2).

BS8300 pinpoints the following areas for consideration seated waiting areas, ticket sales and information points, fitness suites and exercise studios, churches, crematoria and cemetery chapels, educational, cultural and scientific buildings.

Induction loops shall reach EN60118-4 (formally BS6083 Part 4 1981), BS7594 and the requirements of the RNID.

Building Regulations (1992)

Current building regulations state that newly erected or substantially reconstructed non-domestic buildings must provide aids for the hearing impaired. The aim is to enable both members of the public and employees to play a full part in conferences, committee meetings, etc. Areas requiring cover include booking and ticket offices where the customer is separated by the vendor by a glazed screen, reception areas, auditoria and meeting rooms in excess of 100m2. The regulations state that a person with a hearing disability must receive a signal some 20dB above that received by a person with normal hearing. The system should be able to suppress reverberation, audience or other environmental noise.

The Care Standards Act (2002)

On 1 April 2002, the Government's new Care Standards Act came into force. The new regulations demand that care homes provide certain adaptations and equipment for residents, specifically 'facilities, including communication aids (eg: an induction loop system), and signs to assist the needs of all service users, taking account of the needs, for example, of those with hearing impairment, visual impairment, dual sensory impairments. learning disabilities or dementia or other cognitive impairment. where necessary'. (standard 22.6).

These are 'core requirements which will apply to all care homes providing accommodation and nursing or personal care for older people' in England. Regular inspections of homes and enforcement of the new legislation will be carried out by the new National Care Standards Commission.

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The Disability Discrimination Act

The aim of the Disability Discrimination Act (1995) is to stop discrimination against disabled people including the hearing impaired. The Act was recently extended to cover education in schools and colleges and will be strengthened further in October 2004 as the Disability Rights Commission's (DRC) new Code of Practice comes into effect. Service providers, ie: companies or organisations offering goods, facilities and services to the general public, must make 'reasonable' adjustments to ensure that they do not unlawfully discriminate against disabled people. Employers must also take measures to ensure that existing and potential employees are not disadvantaged in the workplace.

Under the Act, 'reasonable adjustments' include the provision of various auxiliary aids, including temporary induction loop systems, to enable a deaf or hard of hearing person to access goods, facilities or services available to the general public. At present, service providers do not have to make any permanent adjustment to their buildings. This, however, is about to change. From October 2004, service providers will be required to install permanent induction loops and infrared systems where it is impossible of unreasonably difficult for a deaf or hard of hearing person to make use of a service. Service providers who fail to make adequate provision for people with hearing disabilities face prosecution. Furthermore, it is not enough to simply install an induction loop system - it must be properly maintained and staff must know how to use it. (DDA. Auxiliary aids and services 5.13)

Some examples of service providers covered under the Act are:

- Telecommunications and broadcasting organisations
- Public utility companies, such as gas, electricity and water suppliers
- Leisure centres, football stadia, national parks and health clubs
- Bus and railway stations, airports and travel agents
- Shops, hairdressers, post offices, banks and building societies
- Hotels, restaurants, cinemas, theatres and pubs
- Hospitals, waiting rooms, clinics
- Solicitors' offices, courts, churches and mosques

The DRC advises service providers to take steps now to prepare for their extended obligations.