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# AUDIO VISUAL SERVICES AND DEVELOPMENT - ISS

**The Dry-Marker Pen – A Simple Explanation of how they work**

Inside a Dry Marker Pen there is a mixture of two basic liquid components; a Coloured Ink and a solvent, usually Isopropyl Alcohol, or similar. This mixture of liquids is fed, by a capillary action, into the felt nib of the pen.

Once the Ink and Solvent Mixture is excreted onto a surface by writing the solvent rapidly evaporates away, turning the ink into a dry dust residue, from whence we get the expression ‘Dry-Marker’. Once the solvent has fully evaporated the dry dust-like Ink residue can be easily brushed off the surface.

**When has the Pen, Run Out?**

Unlike a Ballpoint Pen, that stops writing when it runs out, the deciding factor with a Dry-Marker Pen is the ratio between the Ink and the solvent. When the proportion of these two components drops below a critical level there is insufficient solvent to turn the Ink into a dust. The results of this, is to leave wet Ink on the surface which will smudge when wiped and contaminate the rest of the board.

The writing when using the pen, once a pen has deteriorated, will look very similar to normal. But when you come to erase the marks, as they are still damp ink, they will smear or smudge rather than brush away as dust.

Once a pen deteriorates to this level it should be immediately discarded, and thrown away (not left by the board for another unsuspecting user!).

**Pen Quality**

It is difficult to identify specific makes of pen that are better than others. Part of the quality will be determined by the material from which the nibs are made, as well as the capacity and size of the barrel. However, the vast majority of volume producers do produce a perfectly serviceable product and in all cases the chemical make up of the fluids used is similar. User preference, price and availability will inevitably be the key deciding factors.

**Use of Erasers**

There are a number of specific erasers available on the market and all are quite adequate. However, the essential factor when using any eraser whether it is a pad, duster, tissue or brush type is that it remains as clean as possible.

There is no way of properly cleaning a Dry-Wipe board of any type with a dirty eraser.

**Common Problems**

All writing boards have practical limitations, none are ‘self-cleaning’ and all need a degree of care to ensure that they continue to provide a satisfactory surface to write on. The vast majority of problems experienced with Dry-Marker pens and Dry-Wipe boards are down to general housekeeping, or lack of it.

**Dirty Boards**

When a board is in use it will inevitably attract a degree of surface dirt and the expectation that it will remain perfectly clean all the time should be dispelled. It should however be generally clean in appearance and allow the clear visual definition between the surface and the pen.

It is recommend that the cleaning of all Dry-Wipe surfaces is carried out as recommended in the ‘Cleaning and Maintenance’ procedures document produced by AVSD.

Once a new, or recently cleaned surface, is to be used, then any deterioration in the surfaces or pens performance should be acted upon immediately, to negate problems for subsequent users.

**Smearing Pens and Dirty Boards**

The most common reasons for the deterioration of a Dry-Wipe Surface are –

* **Using a pen that has or has nearly run out** (seenotes on ‘When has the pen, Run Out?’). As the writing is erased it will immediately smear, and if you continue to use the pen it will contaminate any part of the board used as well as any eraser used, with the sticky ink.
* **Surface Contamination or Improper Use of cleaning solutions on a board.** Surface Polishes and Cleaning Solutions that are used on a board should be FULLY removed by careful cleaning with first a mild soapy solution, then clean water and finally buffing the surface with a clean dry cloth. It is essential that the surface is totally clear of all contaminants. Any residue that is left on the board will attract and adhere to the ‘ink dust’ from the pens. It should also be considered that in some cases any erasers that have been used and also contaminated with the residue should be changed.
* **Special Cleaning Products.** There are numerous special cleaning products available for ‘cleaning’ of problem areas or inappropriate pen use Dry-Wipe surfaces. When used correctly, in line with their individual instructions, these are useful when renovating neglected or abused surfaces. However, they nearly all contain a cocktail of different solvents, designed to clean off a number of different pen types. The difficulty with using these cleaners is that they have a tendency to leave an invisible residue of the solvents on the surface. If it is necessary to use any specialist cleaning products the surface should be thoroughly cleaned afterwards to ensure that all traces of the solvents have been removed.
* **A Simple Test.** On any surface that has become very dirty or marked a simple test is to obtain a NEW pen and try it onto a Dirty section of the board. Leave it to thoroughly dry and then very lightly erase what you have written with a clean duster or tissue. The visible ‘negative ghosting’ effect that you will observe shows that the pen and board are working as they should.