

STAGELIGHTING CONTAINMENT

The Stagelighting system requires two separate wiring / containment systems:

SL/1 - LV mains supplies, both dimmed and constant (230V or 400V)

Note that the dimmed stagelighting circuits in SL/1 emit large amounts of radiated energy, which can adversely interfere with data and other services.

SL/1 can be integrated with the general wiring for normal lighting and power services in the building. In many cases, using the same containment for both is essential to save space.

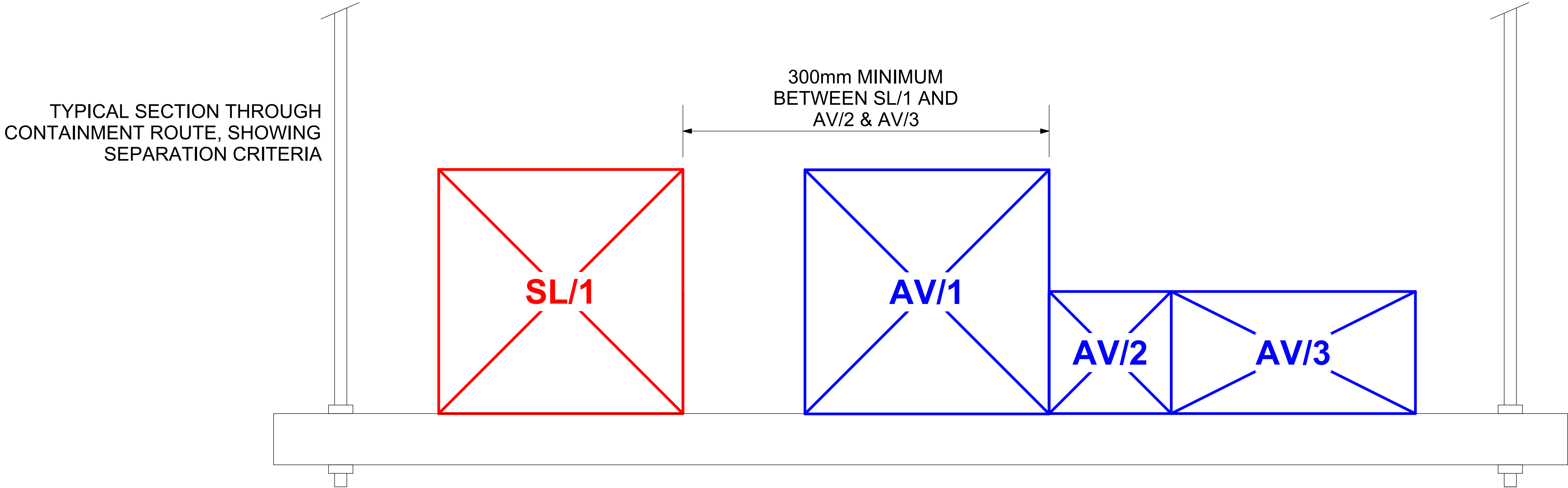
Temporary equipment outlets and power supplies may be fed from single cables contained within SL/1, or from SWA cable, either mounted on a separate tray system or cleated direct to walls. SWA cables are subject to the same separation criteria.

AUDIOVISUAL CONTAINMENT

The Audiovisual containment systems play an important role in protecting the integrity of sensitive audio equipment from induced noise, especially from the dimmed stagelighting circuits in SL/1. The Audiovisual system will require three separate wiring / containment systems:-

AV/1 - Audiovisual LV mains supplies (230V)
AV/2 - Loudspeakers (<50V)
AV/3 - AV Data and communication services, ELV lighting data services (<50V)

Temporary equipment outlets and power supplies may be fed from single cables contained within AV/1, or from SWA cable, either mounted on a separate tray system or cleated direct to walls. SWA cables are subject to the same separation criteria.



CONTAINMENT DESIGN

Other than SWA main feed cables, all SL and AV wiring for both mains power and extra low voltage systems should be contained within either **sheet steel trunking or steel conduit**. Cable tray, basket or plastic containment is not suitable.

Charcoalblue will provide general arrangement and layout drawings showing the disposition of equipment and termination points, together with schematic wiring diagrams and details of special cable requirements.

The Specialist Contractor will co-ordinate this information within the electrical wiring systems documents, and will be responsible for ensuring adherence to regulations, sizing of containment and power cables, compliance with good electrical practice, setting of electrical standards for the project and supervision of electrical tests.

In principle the specialist contractor should install all containment and as much wiring as possible for all the specialist systems to ensure good co-ordination. An arrangement whereby the specialist sub-contractors each install their own containment should be avoided because it often leads to duplication of containment in congested areas with poor co-ordination.

CONTAINMENT SEPARATION

Long runs of AV system containment parallel with other systems are to be avoided.

Where systems have to cross, this must be done at right angles.

It is also recommended that building IT & data system cabling should be kept separate from AV systems wiring.

Although structured cable is frequently installed on cable tray or basket, the theatre backstage environment means that this type of cable should be installed in steel containment in these areas. Theatre equipment networks will be dedicated performance networks, and will be in addition to any other structured cable systems in the building, e.g. for IT, although there may be links between the systems at the patchbays.

All containment in the technical areas around and above the stage area must be carefully coordinated and designed so as not impede the operation of those areas in performance conditions.

CONTAINMENT SIZING

Typical containment sizes shown - all containment is to be sized and specified by the Specialist Contractor, based on circuit information from Charcoalblue.

In calculating containment sizes, due allowance must be made for the probability that systems will be extended during the life expectancy of the wiring. Not less than 25% of additional capacity should be allowed for in all specialist systems containment (if the space factor set for the project is higher than this, the higher figure should be used)

The containment systems are to be accessible for the installation of additional wiring in the future. Where containment is installed above ceilings, behind wall finishes, under floors etc, access hatches should be provided as needed, but at least at every change of direction.

Many of the specialist cables will have multiple cores and sheaths, and may be of limited flexibility; therefore capacity around corners may be less than with normal cabling. It is essential that allowance is made for tight packing on bends in calculations of containment size. Right angle bends must be formed with purpose-made gusset units as far as practicable.

Notes:-

This drawing is intended to provide information to the Specialist Contractor on the containment required for the theatre technical systems.

Although the containment routes are generally specified by the Specialist Contractor, we have indicated here the different groups required and the basic separation criteria between these groups.

Where building design prevents the full separation criteria being achieved, it may be possible to run groups closer for short lengths, but this should be referred to Charcoalblue, who will assess on a case-by-case basis, depending upon the number and type of circuits in each containment system.

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VENUE CYMRU, LLANDUDNO		

Drawing Title:	
ELECTRICAL SYSTEMS	
CONTAINMENT FOR SPECIALIST THEATRE SYSTEMS - TYPICAL DETAILS AND ARRANGEMENT	

Drawing Type:	
DETAIL DRAWING	

CHARCOALBLUE



THEATRICAL

INNOVATION

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