EESA

ENTERTAINMENT ELECTRICAL SAFETY ASSOCIATION

“Splay” or “Breakout” - Know the Difference

In the entertainment industry, 19-pin circular connector (Socapex) ***Break-outs*** and ***Break-Ins*** have long been referred to as “**Splays**”.

To avoid confusion, it is recommended that the term “**Splay**” only be used for “Splayed Cable” - that is; multiconductor cable in which the outer jacket has been removed to expose the insulated inner conductors.

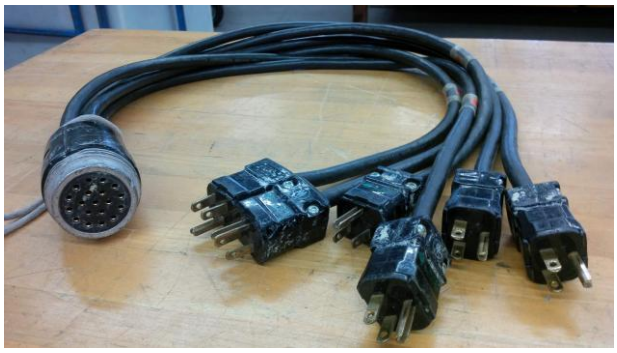
This practice is unsafe and contravenes section 2-024(1) of the Canadian Electrical Code (CEC).

Break-in or Break-out Assembly: (Accepted practice)

The 19-Pin circular connector (generally referred to as Socapex), and generally following USITT protocol RP-1, is used in the entertainment industry to adapt the mating ends of a 19-pin circular connector on multi-conductor cable to multiple individual circuits.



Socapex Break-out - Twist-lok



Socapex Break-in – Straight Blade

Splay Assembly: (Unsafe use of multiconductor power distribution cable)

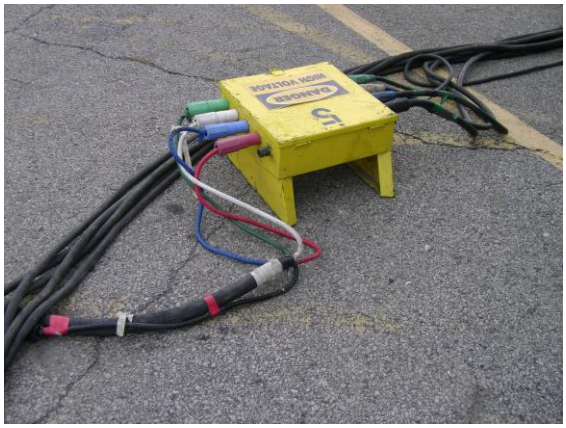
Misapplication of Single-Pin Connectors on Multi-conductor Cables

Removal of the exterior jacket and installation of single-pole connectors onto the exposed inner conductors exposes interior construction of the multi-conductor cable to the ingress of moisture and or other contaminants. Unprotected inner-conductor insulation exposed to environmental conditions leads to degradation of the conductor insulation resulting in insulation cracks and tears, exposing “live” conductors. The individual inner-conductor insulation of the multi-conductor cable should only be exposed within a rated multi-pole connector or enclosure and is not rated or approved to be exposed to abrasion, moisture, strain or U.V. *Depending on the specific cable, it may also not be rated for exposure to oil.*

CEC 2-024 Use of approved equipment *(see Appendices A and B)*
(1) Electrical equipment used in electrical installations within the jurisdiction of the inspection department shall be approved and shall be of a kind or type and rating approved for the specific purpose for which it is to be employed.
Appendix B ***Rule 2-024(1)***
It is intended by this Rule to emphasize that only electrical equipment approved for the application should be used under the provisions of this Code.



Unsafe Splay with exposed conductors



Misapplication of multi-conductor used with single-conductor Cam Lok connectors.