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electrically conductive wire/s being extruded concurrently together. However, there can be another alternative way for this present invention to get the same end result. This involved having both the plastic ribbon and the plastic profile being co-extruded from two separate extruders but via a single combined tool die, i.e. using co-extrusion process. Instead of having two (2) separate tool dies, using a single combined tool die gives the added advantage of minimizing the factory floor area needed. However, using two (2) separate tool dies provides the possibility to update and to quick change each side independently, which will remove the need to redo a full die tool if, for example there is a request to increase the number of conductive wires from three to four. Last but not least, the third (3rd) possible arrangement involves also using two (2) different and separate extruders and two (2) separate tool dies in which one (1) of the tool die is for extruding the plastic profile. For this third (3rd) possible arrangement, the electrically conductive wire/s will be inserted from the top or at different angles from the top via the wire insert through the die in the extruder such that the extruded plastic profile is extruded in a downwards direction (by gravity) concurrently with the wire being encapsulated within the plastic profile.

The design and layout of the present invention differs from the Prior Art and has the following advantages:

1. ***Minimized Wire Misalignment***:

   The profile consists of the conductive wire/s encapsulated by a layer of extruded plastic resin, whereby the conductive wire/s is introduced directly at the extruder side (via the wire insert in the tool die in order to ensure precise positioning of the wire) and is extruded at the same time concurrently with a layer of plastic resin over it, thus encapsulating the wire/s. This is different from the Prior Art whereby the conductive wire/s is fed from a separate wire-feeding machine and overlay

CLAIMS

What is claimed is:

1. A **method** for manufacturing of a flexible plastic tubing whereby it comprises of the following steps:
   (a) extruding plastic ribbon, with the plastic ribbon helically wrapped around the winding rolls such that its edges overlap and is simultaneously heat-bonded together to form the wall of the flexible tubing, with the winding rolls rotating in unison in a certain clockwise or anti-clockwise direction and advancing forward concurrently to form the base material for the flexible tubing; and concurrently
   (b) extruding plastic profile whereby it consists of at least one (1) or more electrically conductive wire (or heated conductor) being embedded inside, with the plastic profile being wrapped and heat-bonded around the plastic ribbon forming the flexible tubing; and
   (c) wherein the electrically conductive wire (or heated conductor) is being fed through a wire insert via the back of the tool die directly connected to the extruder in order to ensure precise positioning of the wire in the plastic profile, whereby
   (d) the plastic resin for the plastic ribbon is different from the plastic profile, and where
   (e) both the resins are provided by two (2) different extruder, and whereby
   (f) the plastic ribbon is extruded using at least an independent tool die and

(g) the plastic profile is extruded using another separate independent tool die, wherein the plastic profile consists of at least one (1) or more electrically conductive wire (or heated conductor) being embedded inside, and

whereby

(h) the plastic ribbon and the plastic profile are co-extruded separately from two separate extruders via a single combined tool die, and

whereby

(i) the plastic ribbon consists of at least one (1) guide; and

(j) the plastic profile consists of corresponding guide in order to ensure alignment of the plastic ribbon with the extruded profile together when being helically wrapped and heat bonded together, and

whereby

(k) the wire conductor embedded within the profile is able to act as a form of added reinforcement for the flexible tubing; OR

(l) the wire itself can serve to transmit and exchange useful data between each end of the flexible plastic tubing, and

whereby the plastic resin for the profile is electrically insulating and yet is conductive to conduct away any heat generated from the embedded wire.

2. A **method** for manufacturing of a flexible plastic tubing whereby it comprises of the following steps:

(a) extruding plastic ribbon, with the plastic ribbon helically wrapped around the winding rolls such that its edges overlap and is simultaneously heat-bonded together to form the wall of the flexible tubing, with the winding rolls rotating in unison in a certain clockwise or anti-clockwise direction and advancing forward concurrently to form the base material for the flexible tubing; and

concurrently

(b) having the electrically conductive wire (or heated conductor) being fed through a wire insert from the top or from different angles via the wire insert through the tool die in the extruder, and followed by

(c) having the extruded plastic profile being extruded in a downwards direction by gravity concurrently with the wire being encapsulated within the plastic profile;

whereby

(d) the plastic resin for the plastic ribbon is different from the plastic profile, and

where

(e) both the resins are provided by two (2) different extruder, and

whereby

(f) the plastic ribbon is extruded using at least an independent tool die and

(g) the plastic profile is extruded using another separate independent tool die, wherein the plastic profile consists of at least one (1) or more electrically conductive wire (or heated conductor) being embedded inside.

3. A **method** for manufacturing of a plastic tubing whereby it involves guides being formed onto the plastic profile being extruded out; whereby

(a) these guides are formed with the aid of the tooling die, followed by

(b) having the electrically conductive wire/s being laid and align on the guides at the plastic profile side by the mechanical winding force of the winding roll, such that

(c) it encapsulates the wires before the profile overlaps onto the plastic ribbon in a helical manner on a winding roll.