Conductor Stranding 導體絞合

Stranded conductors are composed of uninsulated “strands” of wire twisted together. The advantages of conductor stranding over a single strand of equal cross-section are increased flexibility and flex-fatigue life. Stranded conductor can be manufactured in a variety of configurations, the most common being concentric (true concentric, equally concentric, unidirectional concentric, and unilay concentric), bunched and rope.

絞合導體由絞合在一起的非絕緣“線”絞合線組成。 在相同橫截面的單股上導體絞合的優點是增加了柔韌性和撓曲疲勞壽命。 絞合導體可以以各種配置製造，最常見的是同心（真正同心，等同心，單向同心，同心同心），成束和繩索。

Concentric 同心

When the term “concentric stranding” is used, it refers to the definition of the word “concentric”, which is having a “common centre”. Concentric conductor may be defined as: a central wire (strand) surrounded by one or more layers of helically laid wires in a geometric pattern.

當使用術語“同心絞合”時，它指的是“同心”一詞的定義，其具有“共同中心”。同心導體可以定義為：由幾層圖案中的一層或多層螺旋佈線包圍的中心線（股）。

The geometric pattern requires that concentric constructions can only be produced with 7, 19, 37, 61, (etc.) strands or members, following the pattern that each successive layer has 6 more strands than the layer below it.

In all types of concentric constructions, the geometric pattern of the strands is consistent for the entire length of the conductor. That is, the central strand, and the strands in each layer remain in their respective positions from the beginning to the end of its length.

The main advantage of concentric constructions is the close/tight diameter tolerances that can be maintained on the conductor. Concentric constructions have very smooth uniform surfaces that are suited for thin wall insulation in high performance applications.

幾何圖案要求同心結構只能用7,19,37,61，（等）股線或構件生產，遵循每個連續層比其下面的層多6個股線的圖案。

在所有類型的同心結構中，股線的幾何圖案對於導體的整個長度是一致的。也就是說，中心股線和每層中的股線從其長度的開始到結束保持在它們各自的位置。

同心結構的主要優點是可以在導體上保持緊密/緊密的直徑公差。同心結構具有非常光滑的均勻表面，適用於高性能應用中的薄壁絕緣。

Concentric Stranding 同心絞合

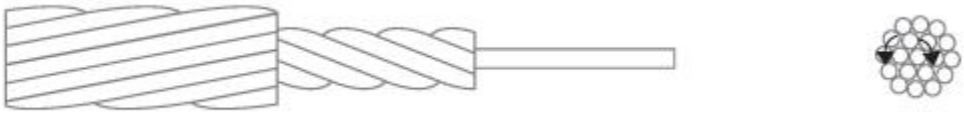
There are four common types of “concentric” constructions manufactured for the high performance wire and cable industry. Although there are four distinct types, the industry normally refers to “Concentric” as “True Concentric” and will use the terms interchangeably. The other types are referenced as noted.

為高性能電線電纜行業製造了四種常見類型的“同心”結構。 雖然有四種不同的類型，但業界通常將“同心”稱為“真正的同心”並且將可互換地使用這些術語。 如上所述引用其他類型。

Concentric – or True Concentric 同心 - 或真同心

Characterized by a central wire surrounded by one or more layers of helically laid wires in a geometric pattern, with alternately reversed lay direction and increasing lay length.

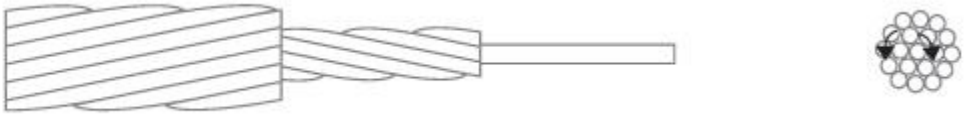
，其特徵在於中心線由幾層圖案中的一層或多層螺旋佈線包圍，交替地反轉捻向和增加撚距。



Equally – or Equally Concentric 等同- 或等同心，

Characterized by a central wire surrounded by one or more layers of helically laid wires in a geometric pattern, with alternately reversed lay direction and the same lay length.

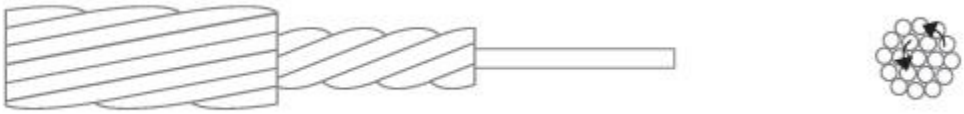
其特徵在於中心線由幾層圖案中的一層或多層螺旋佈線包圍，交替反轉的捻向和相同的捻距。



Unidirectional – or Unidirectional Concentric　單向 - 或單向同心，

Characterized by a central wire surrounded by one or more layers of helically laid wires in a geometric pattern, with the same lay direction and an increasing lay length.

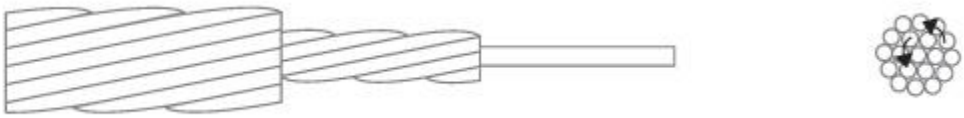
其特徵在於中心線由幾層圖案中的一層或多層螺旋佈線包圍，具有相同的捻向和增加的捻距。。



Unilay – or Unidirectional Equally Concentric 單向- 或單向同距同心

Characterized by a central wire surrounded by one or more layers of helically laid wires in a geometric pattern, with the same lay direction and the same lay length.

其特徵在於中心線由幾層圖案中的一層或多層螺旋佈線包圍，具有相同的捻向和相同的捻距。



Bunched Stranding – Bunch strand wire 狀絞合 - 束絞線包

Contains any number of strands in random pattern. Twisted in one operation, all strands have the same lay direction and same lay length, however, the result is a rougher surface and lower dimensional tolerance than the concentric constructions. The number of strands is determined by the size of the individual strands and the total cross-sectional area required.

含任意數量的隨機圖案的絞合線。 在一次操作中扭曲，所有股線具有相同的捻向和相同的捻距，然而，結果是比同心結構更粗糙的表面和更低的尺寸公差。 股線的數量取決於各股線的尺寸和所需的總橫截面積

Rope Stranding – Wire constructions 繩索絞合 - 線纜結構

Consist of single strands assembled together into concentric or bunched configurations. Rope stranding has the advantage of increasing flexibility by using a larger number of finer strands while maintaining a tighter diameter tolerance than a simple bunched construction. Ropes are more evident in the larger AWG sizes, such as 8 AWG and larger, but there are also many applications that require the flexibility of rope constructions in the smaller gauges. Constructions vary and can contain hundreds or thousands of strands.

由單股線組裝成同心或成束結構。 繩索絞合的優點是通過使用更多更細的股線來增加靈活性，同時保持比簡單的成束結構更緊密的直徑公差。 繩索在較大的 AWG 尺寸中更明顯，例如8 AWG 和更大，但是也有許多應用需要在較小規格中具有繩索結構的靈活性。 結構各不相同，可能包含數百或數千股。