INTERNATIONAL TCHOUKBALL FEDERATION

TECHNICAL COMMISSION

Appendix 1 to regulations for material certification by the FITB

TECHNICAL CRITERIA FOR TCHOUKBALL FRAMES AND NETS

N.B. The following is a translation from the original text, which is in French. In case of discrepancy between the two, the French original has precedence.

Final draft, June 11, 2003

Goal of this document

To be able to ensure the quality of the material necessary for the practice of tchoukball, the Technical Committee (TC) of the FITB formulated various criteria, following the principles defined by Dr. Hermann Brandt, the inventor of tchoukball. This document aims to present the criteria to ensure a good quality of tchoukball frames (metallic structure and net).

The control of the frame's quality is based on the control of the following independent parts:

- the metallic structure, including the tube, the support system, the hooks and the connections

- the net, including the net itself, the buckles, the bungee and the connection system for bungee.

A differently conceived or designed metallic structure or net could be considered as corresponding to the regulations if it allows for a correct bounce of the ball, sufficient durability, and if it ensures the safety of players. The TC alone has the authority to decide on this matter.

The recognition of the metallic structure or the net as according with these technical requirements does not in itself give any rights to the manufacturer or to the distributor regarding marketing, communications or advertisement. These rights are governed by a contract promulgated by the FITB.

The FITB distinguishes between two categories of metallic structure and net: those of Category A (for competition) and those of Category B (for leisure play). The requirements for the Category A metallic structures and nets are more rigorous than those for Category B.

The uniformity of the metallic structures and of the nets in accordance with the FITB Rules of the Game will thus be guaranteed at all FITB tournaments.

1 Technical criteria for the category A metallic structures (competition)

1.1 The metallic frame must meet the following characteristics :

1.1.1 The external dimensions are 1000 mm x 1000 mm (± 10 mm).

1.1.2 The tube is of drawn steel without longitudinal weld, $\varnothing_{ext}$ 32.5 mm (± 2.5 mm).

1.1.3 The corners of the frame are rounded in such a manner as to avoid any injury. The internal radius shall be between 50 mm and 120 mm.

1.1.4 The frame is built with a support mechanism which gives it a 55° (± 1°) angle from the floor.

1.1.5 The support mechanism keeps the frame stable while the game is being played.

1.1.6 The support mechanism is built in such a manner as to make it possible to attach weight to it in order to help stabilise the frame.

1.1.7 The support mechanism is fold-able, solid, practical and durable. See the pictures titled "Correct Frame Support" No.'s 1, 2 and 3.

1.1.8 The fixings of the support mechanism are fabricated in such a manner as to avoid any risk of injuries. See the pictures titled "Correct Bolt Heads" No.'s 1, 2 and 3.

1.1.9 The frame is fitted with solid and durable protecting "shoes" in order to protect the floor and to stabilise the frame. See the pictures titled "Correct Protecting Shoes".

1.1.10 The frame is painted with a paint which is shock-resistant or has a rustproof surface.

1.1.11 The total weight of the frame ranges from a minimum of 10 kilograms (22.0 pounds) to a maximum of 18 kilograms (39.7 pounds).

1.1.12 The frame is built with 52 holes to which the net hooks can be attached (see the picture titled "Correct Hole Locations") :

- The first and the last hole on each side are placed 110 mm (± 20 mm) from the edge of the frame.

- The 11 other holes are spaced uniformly between the first and last holes.
- The holes are aligned.

1.2 The net hooks must meet the following characteristics :

1.2.1 The hooks are made of steel.

1.2.2 The hooks are designed to prevent them from coming out of the holes in the metallic part of the frame. See the pictures titled "Correct Hooks" No.'s 1 and 2.

1.2.3 The diameter of the net string is 3 mm minimum.

1.3 Weld and Mechanical Assembly

1.3.1 The quality of the weld shall be sufficiently strong to avoid risk of breaks (ductile and fragile) during regular use of the frame.

1.3.2 The quality of the mechanical parts of the frame (nuts, bolts, etc.) shall be sufficient to avoid risk of breaks (ductile and fragile) during regular use of the frame.

2 Technical criteria for the category B metallic structures (Leisure activity)

2.1 The metallic frame must meet the following characteristics :

2.1.1 The external dimensions are 1000 mm x 1000 mm (± 25 mm).

2.1.2 The tube is of drawn steel, external diameter 32.5 mm (± 2.5 mm).

2.1.3 See 1.1.3

2.1.4 The frame is built with a support mechanism which gives it a 55° (± 1.5°) angle from the floor.

2.1.5 See 1.1.5

2.1.6 -

2.1.7 See 1.1.7

2.1.8 See 1.1.8

2.1.9 See 1.1.9

2.1.10 See 1.1.10

2.1.11 The total weight of the frame must be between 8 kilograms minimum and 18 kilograms maximum (17.6 to 39.7 pounds).

2.1.12 The frame is built with 52 holes for the net hooks. See Picture titled "Correct Hole Locations" :

- The first and last hole on each side must be 110 mm (± 40 mm) from the edge of the frame.
- The 11 other holes on each side are spaced evenly between the first and the last hole.
- The holes are aligned.

2.2 The net hooks on the frame must meet the following characteristics :

2.2.1 See 1.4.1

2.2.2 See 1.4.2

2.2.3 The diameter of the net string is 2.5 mm minimum.

2.3 Weld and Mechanical Assembly

2.3.1 See 1.6.1

2.3.2 See 1.6.2

3 Technical criteria for the category A net (competition)

3.1 The net must meet the following characteristics :

3.1.1 The net is stretched across the metallic frame with elastic cords or "bungees" (see Figure 2 and rule 1.5). With a 5 kilogram (12 pound) weight suspended from the center of the net, the deflection should be between 1.5 centimeters minimum and 2.5 centimeters maximum. See Figure 1 for details.

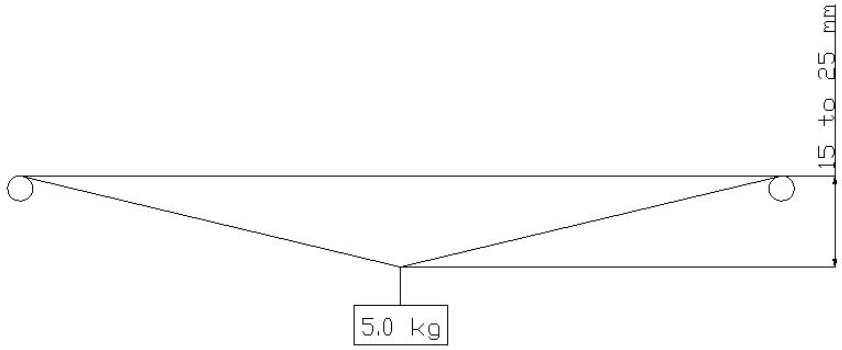


Figure 1 : Tautness of the Net of a Category A Frame.

3.1.2 Place the net flush to the edge of the metallic part of the frame in order to avoid a bad rebound of the ball close to the metal tube.
3.1.3 The net is knotted.
3.1.4 The dimension of the net when it is stretched across the frame is 700 millimeters x 700 millimeters (± 30 mm), not including the metallic rings.
3.1.5 The net is made of braided or woven nylon filament Ø 3 mm (± 0.5 mm).
3.1.6 The mesh netting is spaced very regularly, arranged diagonally, forming squares of about 38 mm x 38 mm. The squares shall be arranged according to the design shown in Figure 2.

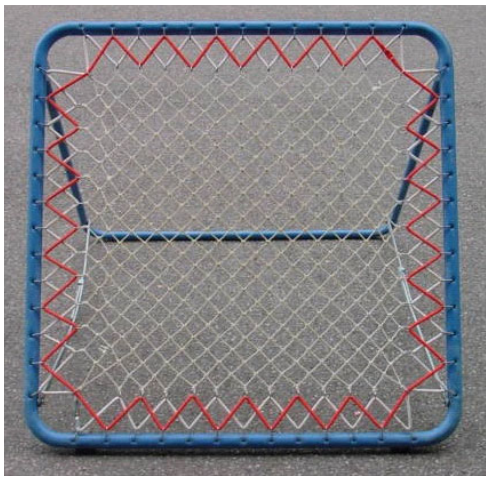


Figure 2 : Design of the Netting and Elastic Cords ("bungees").

3.1.7 The final knot at the junction of two filament ends shall be simple, neat, and solid. See the pictures titled "Correct Junction Knot " No.'s 1, 2, 3 and 4.
3.1.8 The net shall be resistant to wear or abrasion from contact with the ball.
3.1.9 The net shall be impregnated in order to make it more rigid and resistant to humidity. This helps to keep the net tautness constant.

3.2 The rings of the net must meet the following characteristics :
3.2.1 They shall be steel rings, welded, made of nickel-plated steel or have a rustproof surface.
3.2.2 The diameter of steel strings is 2.5 mm minimum.
3.2.3 The external diameter of the rings is 22 mm maximum.
3.2.4 48 rings are mounted on the net (11 on each side, 1 in each corner)..

3.3 The elastic cords ("bungees") of the frame must meet the following characteristics :
3.3.1 The cords shall be arranged according to the design shown in Figure 2.
3.3.2 The bungees are elastic cords with diameters between 6 mm minimum and 10 mm maximum when stretched.
3.3.3 The final junction between two cord ends shall be designed to avoid any risk of injury. Knots are not allowed.
3.3.4 To increase durability, the elastic ropes shall be sheathed in a protecting material.

4 Technical criteria for the category B net (Leisure activity)

4.1 The net must meet the following characteristics :

4.1.1 The net is stretched across the metallic frame with elastic cords or “bungees” (see Figure 2 and rule 2.5). With a 5 kilogram (12 pound) weight suspended from the center of the net, the deflection should be between 1.5 centimeters minimum and 3.5 centimeters maximum. See Figure 3 for details.

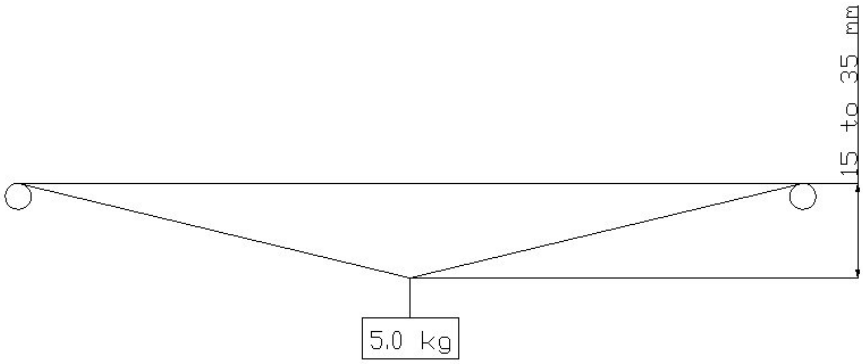


Figure 3: Tautness of the Net for Category B Frames

4.1.2 See 1.2.2
4.1.3 The net is knotted or woven.
4.1.4 The dimensions of the net when tied into the frame are 700 mm x 700 mm (± 40 mm), without the rings
4.1.5 The net is tied with a braided or woven resistant filament diameter 3 mm (± 0.5 mm).
4.1.6 The mesh netting is spaced regularly, arranged diagonally, forming squares of about 38 mm x 38 mm.
4.1.7 See 1.2.7
4.1.8 See 1.2.8

4.2 The rings of the net must meet the following characteristics :

4.2.1 The rings are sturdy
4.2.2 See 1.3.2
4.2.3 The external diameter of each ring is 25 mm maximum.
4.2.4 See 1.3.4

4.3 The elastic cords (“bungees”) of the frame must meet the following characteristics :

4.3.1 See 1.5.1
4.3.2 See 1.5.2
4.3.3 See 1.5.3
4.3.4 See 1.5.4

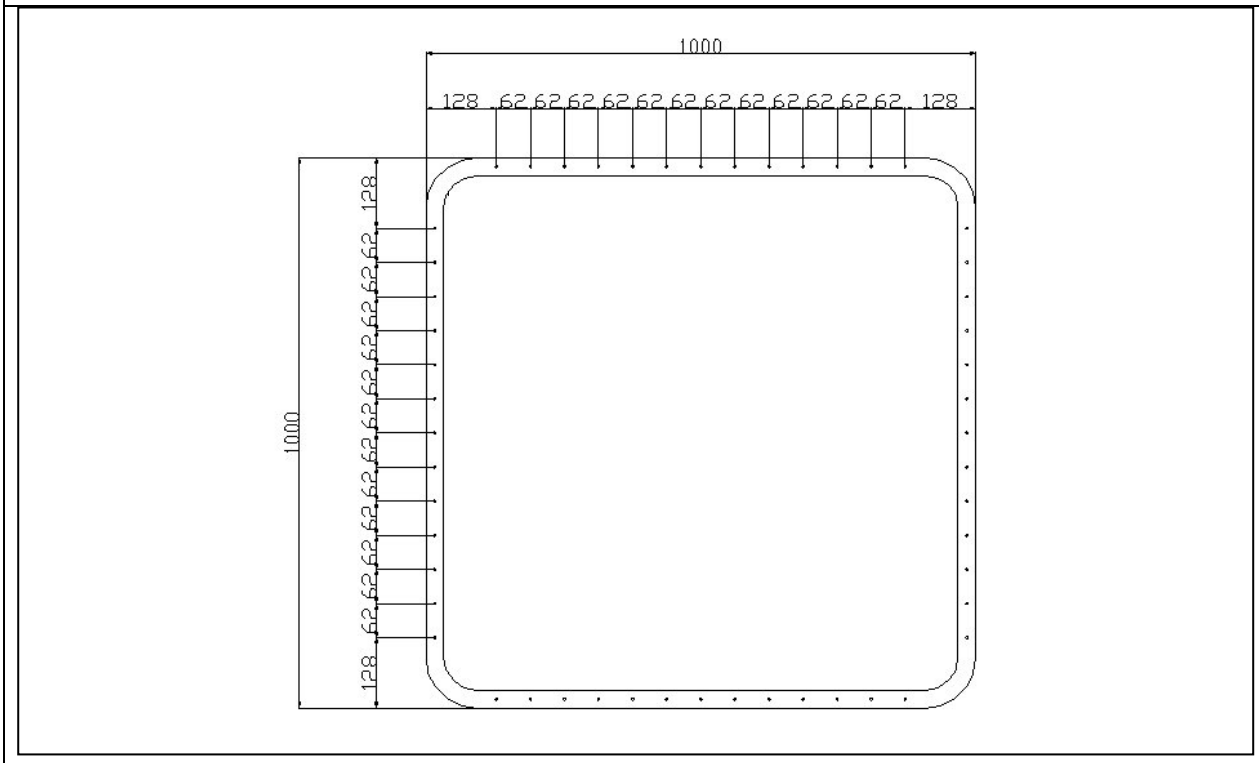
5 Non-certified metallic structures and nets and modification of the technical regulations

5.1 The FITB Technical Committee shall have the right to consider a frame as not corresponding even if it has all the criteria presented above, if the quality of the bounce, its durability, or the safety of the players is considered insufficient, or for any other reason considered valid by the FITB Technical Committee.

5.2 The FITB Technical Committee shall have the right to modify at any time and without advance notice the present technical regulations of tchoukball frames.

The following pictures have informative value. They are meant to illustrate the above explanations.
A different design of tchoukball frame could be considered to correspond to the present regulations if it allows a correct bounce of the ball, sufficient durability, and if it assures the safety of players. The TC alone has the authority to decide on such matters.

Layout of the Holes



Correct Holes Location [mm]

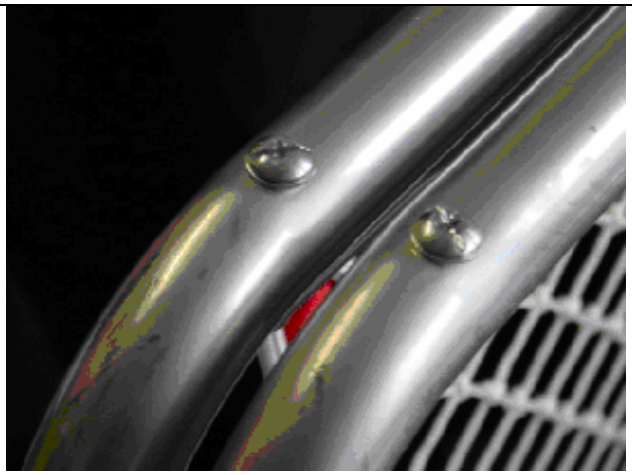
Frame Supports

Correct Support System 1

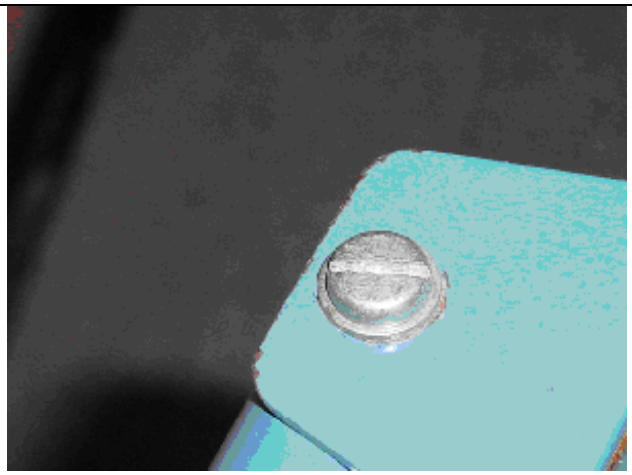
Correct Support System 2

Correct Support System 3

Bolts

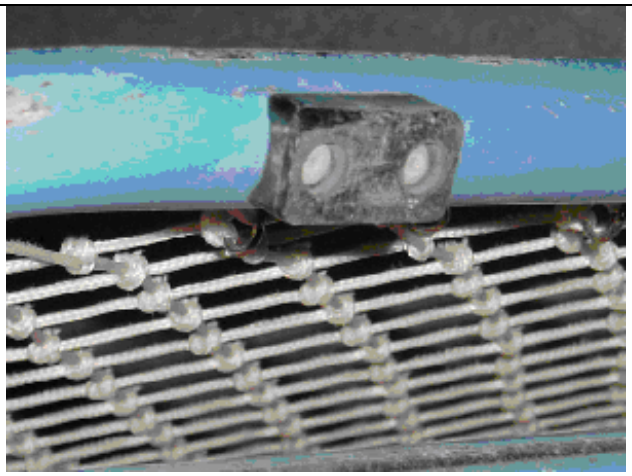


Correct Bolt Head 1



Correct Bolt Head 2

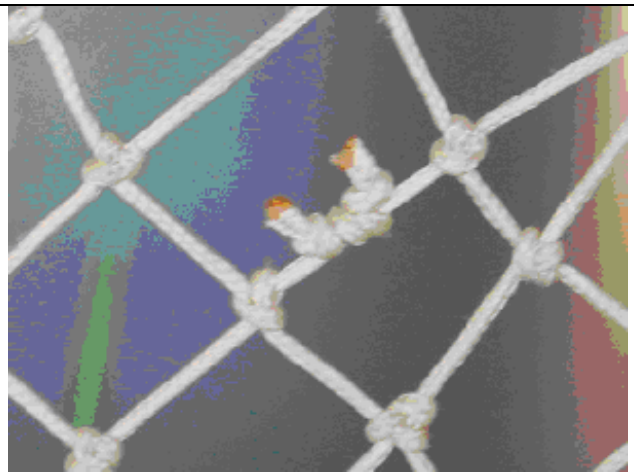
Frame-protecting “Shoes”

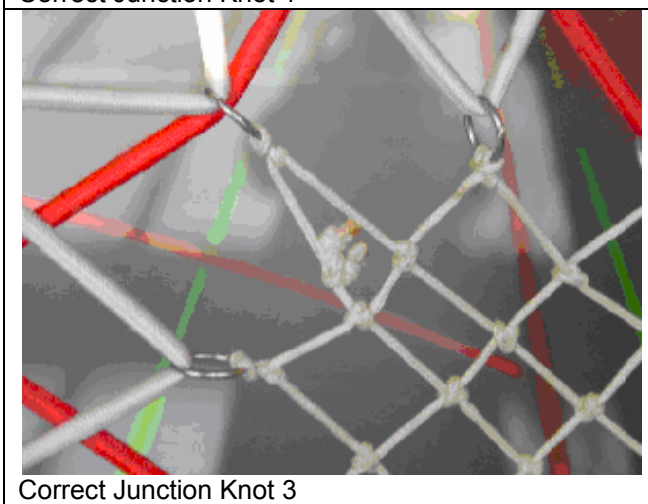


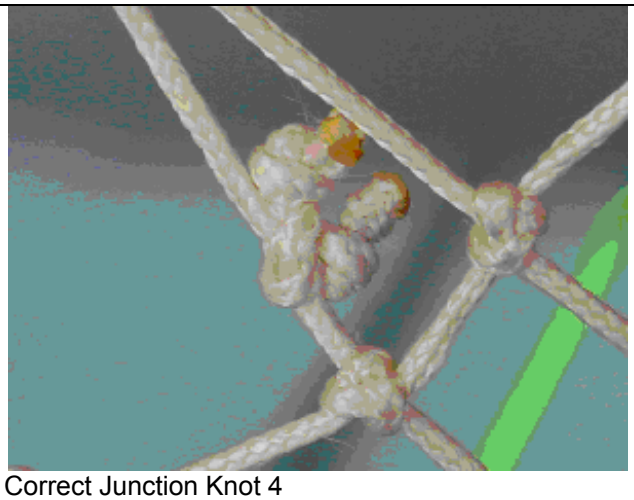
Correct Floor-protecting “Shoes”

Junction Knot

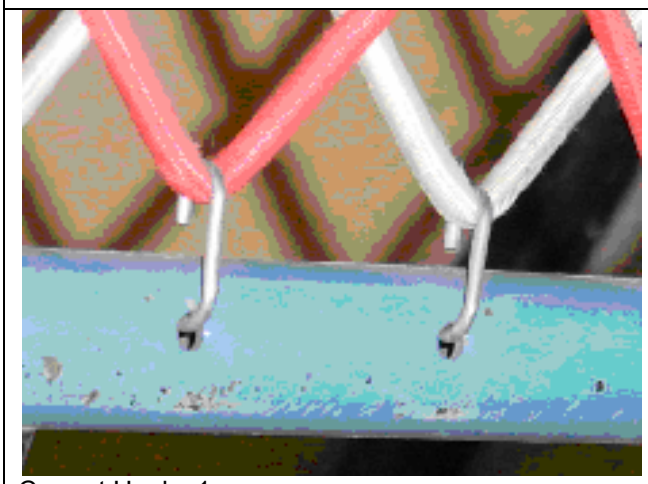

Correct Junction Knot 1


Correct Junction Knot 2


Correct Junction Knot 3


Correct Junction Knot 4

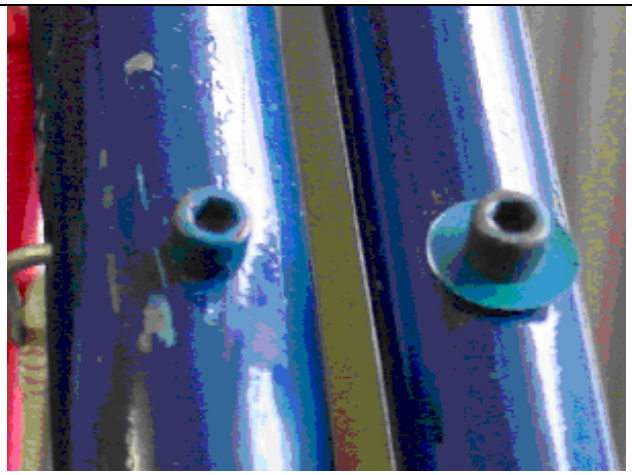
Hooks


Correct Hooks 1

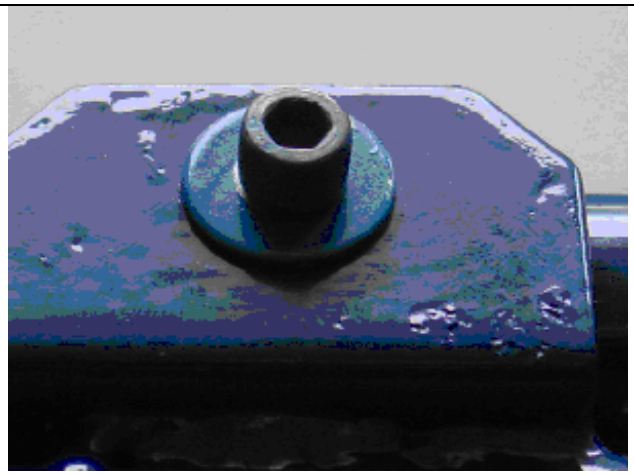

Correct Hooks 2

The following pictures have informative value. They present some of the most frequently committed errors. Those errors are considered as not conforming to the present regulations.

Bolts

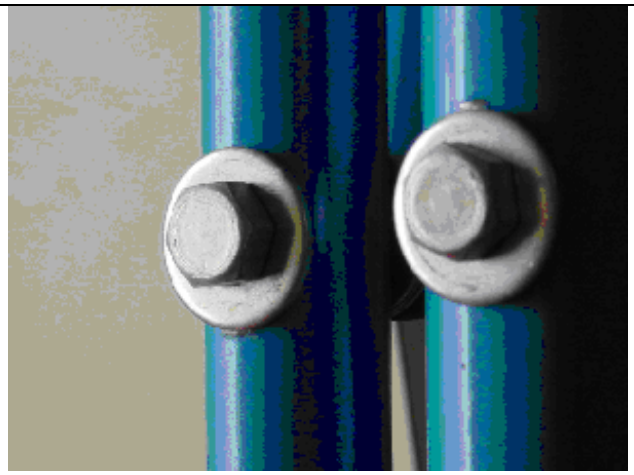


Not Correct Bolts Head 1



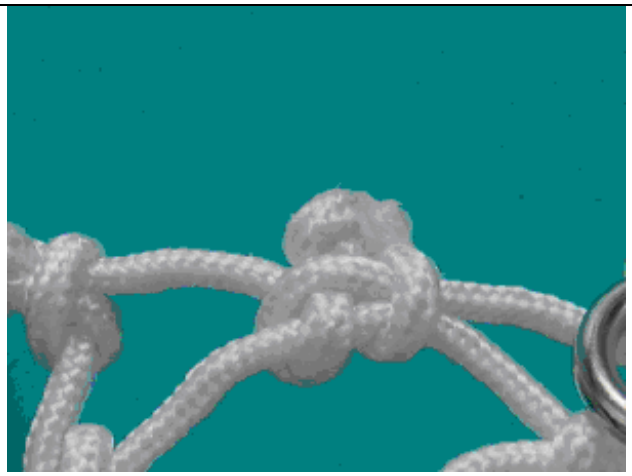
Not Correct Bolts Head 2

Not Correct Bolts Head 3

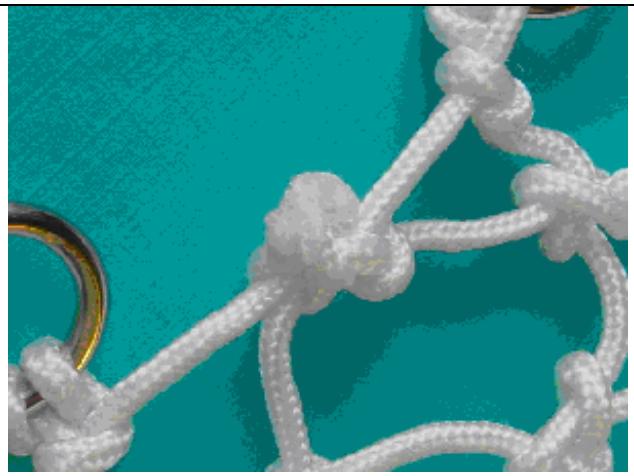


Not Correct Washers and Bolts Head 1

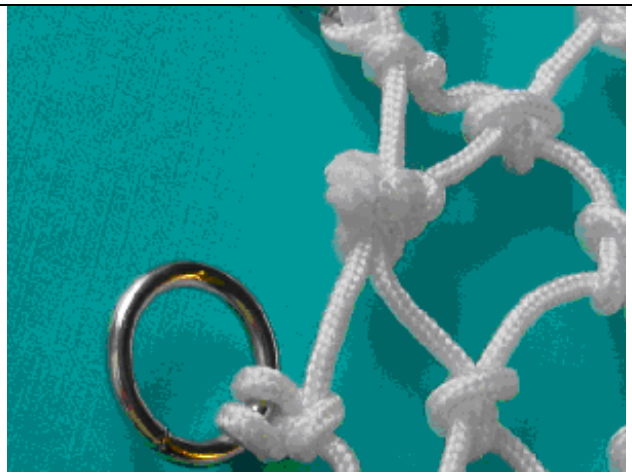
Junction knot



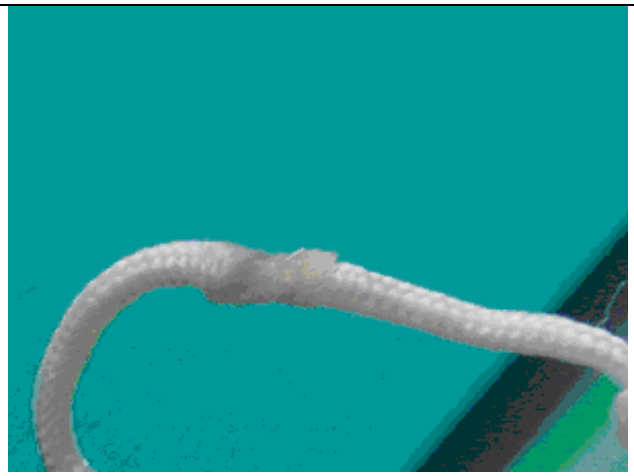
Not Correct Junction Knot 1



Not Correct Junction Knot 2



Not Correct Junction Knot 3



Not Correct Junction Knot 4

Hooks

Not Correct Hooks