

POWERCHAIR FOOTBALL

TECHNICAL SUPPLEMENT

August 2020
Official Technical Specifications
(including Speed Testing)

Fédération Internationale de Powerchair Football Association (FIPFA)

www.fipfa.org

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MEASUREMENTS

All technical measurements in this Technical Supplement are shown as a metric measurement followed by an approximate imperial measurement in brackets. In all cases the metric measurement is the official technical measurement. The approximate imperial measurement is provided for convenience of those more familiar with imperial measurements only.

THE FIELD OF PLAY

Dimensions

The basic size of the field that the game will be played on is 28 m x15 m (91 ft 10 in x 49 ft 3 in) (standard size basketball court):

Length: Maximum 30 m (98 ft 5 in) Minimum 25 m (82 ft)

Width: Maximum 18 m (59 ft 1 in) Minimum 14 m (45 ft 11in)

Surface

The surface of the field must be hard, smooth, and level for easy manoeuvrability of the powerchairs. The use of wood or artificial material is recommended. Concrete or tarmac should be avoided.

Markings

The field is marked with lines, which belong to the areas of which they are the boundaries.

The two longer boundary lines are called touchlines. The two shorter lines are called goal lines.

All lines are a minimum of 5 cm (2 in) wide.

The field is divided into two halves by a halfway line.

The centre mark is indicated at the midpoint of the halfway line. The mark may consist of a 15 cm (6 in) "X" taped securely onto the floor with contrasting/non-damaging tape.

Goal Area

A goal area is marked at the centre of each end of the field, 8 m (26 ft 3 in) wide and 5 m (16 ft 5 in) deep.

Penalty Mark

A penalty mark is placed 3.5 m (11ft 6 in) from the goal line and equidistant from each goalpost to indicate the location of the ball during the taking of penalty kicks.

The mark may consist of a 15 cm (6 in) "X" or line taped securely onto the floor with contrasting/non-damaging tape.

Goal Posts

The goal posts must be placed on the centre of each goal line.

The distance between the posts is 6 m (19 ft 8 in).

They consist of two upright posts placed equidistant from the corners of the field.

The goal post must be made of durable material that can withstand contact from a powerchair during normal play without breaking or tipping over.

The goal post must consist of a round vertical bar, of 5 cm (2 in) diameter and a height not less than 100 cm (39.4 in) and not exceeding 152.5 cm (60 in).

The vertical bar must have bright colour markings to ensure it is clearly visible. There should be a horizontal 50 mm (2 in) stripe on the goalpost easily visible from all directions. The top of this 50 mm (2 in) stripe to be located exactly 50 cm (20 in) from the floor.

The vertical bar is positioned on a flat base, no thicker than 1 cm (0.4 in).

The base can be triangular / round or square with dimensions between 40 cm (16 in) and 61 cm (24 in) wide.

Its weight should allow the post to move when a wheelchair hits the vertical bar, but it should not be moved by the impact of the ball.

A grip maybe used underneath the base, but this should not be larger than the base.

Goalpost Specifications

1. The goal base should weigh enough to not move easily if struck by the ball. Minimum weight will be 15 pounds with a maximum of 27 pounds.

2. The base of the goalpost can be square, round or triangular. The base side dimensions or diameter must be at least 18" and no larger than 24". It should have a non-marring material on its bottom to protect floors from damage. The total thickness of the base with the non-marring material shall be no thicker than 1/2 inch.

3. The base should have a 12" to 13" metal post protruding up to accept a plastic

(PVC material or like durable material) goal post either to slip over or inside of the metal post. This metal post may be solid or tubular. If tubular, it should be made of a gauge thick enough not to bend or dent if struck by a powerchair.

4. If the post is located in the centre of the base, there must be marks on the base to easily replace it in the proper position on the goal line should the post move.

8. Cones are acceptable for club games. The goalpost regulation discussed in this document is for Tournament and Cup play requirements.

9. Please contact the Equipment Specifications Committee for any questions regarding goalpost specifications.

The Corner Arc

A triangle 1 m (39 in) from each corner is drawn inside the field of play.

Officials' Area

An area at least 1 m (39 in) wide is placed around the entire perimeter of the field, which allows the manoeuvre of the officials.

Technical Areas

The technical area lateral limits are from the goal line to the halfway line or 1 m (39 in) from the scorer's table and extend forward to the edge of the officials' area.

The Technical Area must be large enough to allow space for all the team personnel and equipment permitted in accordance with the competition rules. The following are suggested.

Personnel:

- 8 x Players in Powerchairs
- 1 x Coach
- 1 x Assistant Coach
- 1 x Doctor
- 1 x Team Carer / Physiotherapist / Nurse
- 1 x Team Mechanic

Equipment:

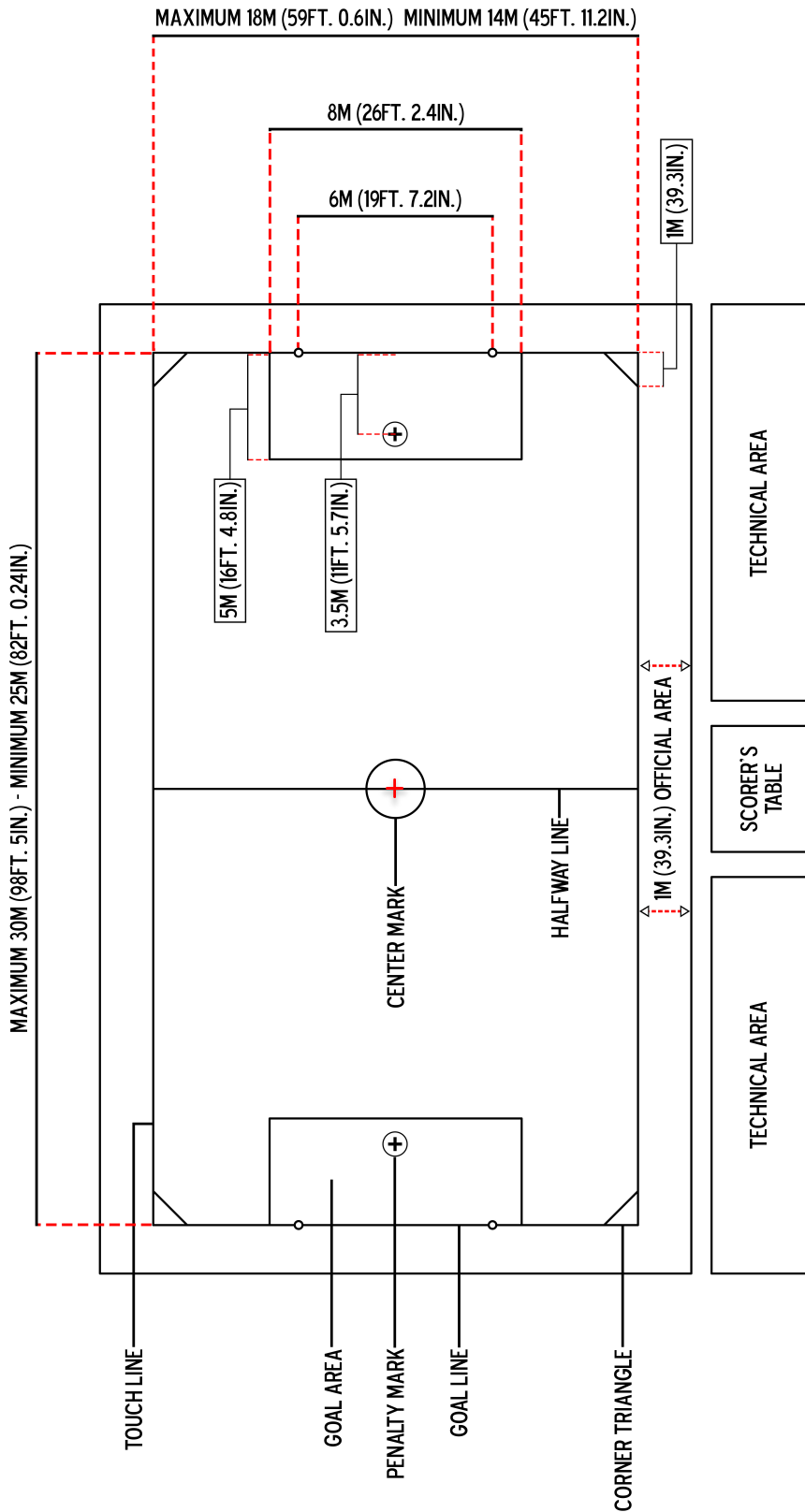
- 2 x Spare Powerchairs
- 8 x Chargers
- An area 1 m (39 in) square for tools and spare parts

Additional requirements and restrictions concerning the technical area are described in the Administrative Notes section of Laws of the Game.

Scorer's Table

A scorer's table and seating should be provided. It will normally be between the two technical areas. Suitable space and power must be available for at least two official scorers and their equipment.

Diagram of the Field of Play



THE BALL

Qualities and Measurements

The ball is:

- Spherical,
- Made of leather, vinyl, or other suitable material, that is low friction, and has reduced bounce.
- 33 cm (13 in) in diameter (no more than 35.6 cm (14 in) and no less than 30.5 cm (12 in)),
- Inflated to an appropriate pressure so as to minimise bouncing yet prevent powerchairs from riding over it.



Notes

The game ball should be inspected before the start of play and “powdered” to reduce the friction of the ball if required. Particular attention should be paid to this if the ball is new or near new or if playing on a field with a high grip surface.

Powdering the ball is best performed by placing the game ball in a large plastic bag with a small amount of talc or “baby” powder and shaking and rolling the bag and ball.

THE PLAYERS EQUIPMENT

Safety

A player must not use equipment or wear anything, which is dangerous to himself or another player.

Basic Equipment

The basic compulsory equipment of a player is:

- A jersey or shirt,
- All members of a team will wear shirts of the same colour which contrasts those of their opponents and shorts or warm-up pants which match the rest of their team,
- A powered wheelchair,
- Lap seatbelt,
- Footguard,
- A clear and visible number in a position on the rear of the powerchair and the front of the powerchair.



Goalkeepers

Each goalkeeper will wear colours that distinguish him from the other players. Distinguishing colours may include shirts, bibs, etc.

The Powerchair

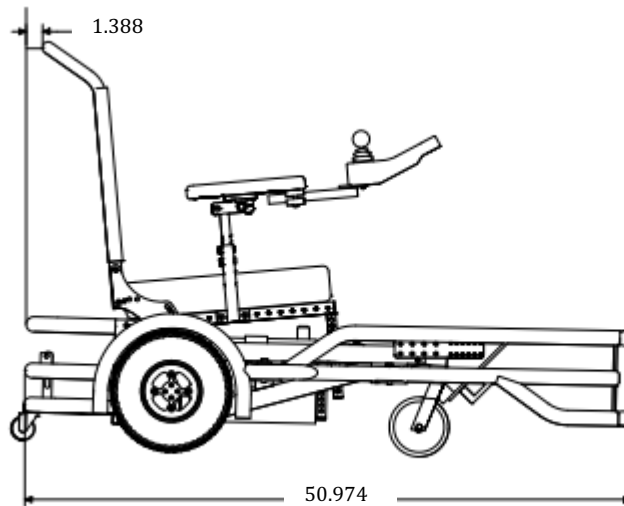
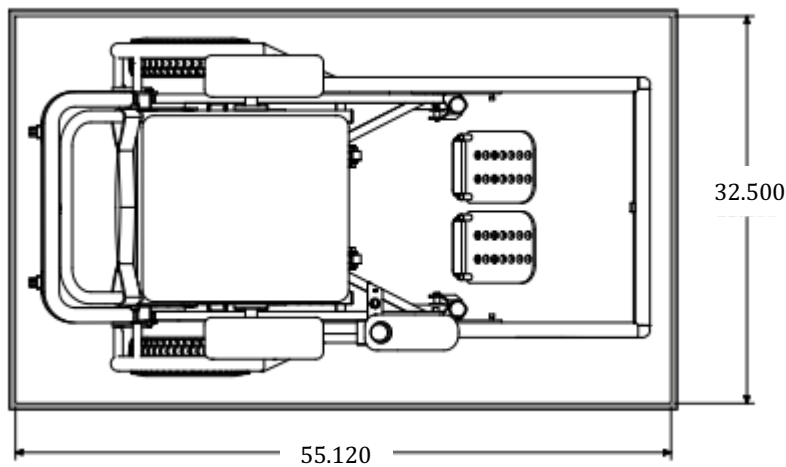
- Powerchairs must have 4 or more wheels,
- 3 or 4-wheeled scooters or similar equipment are not permitted,
- The maximum speed allowable during the match for powerchairs is 10 km/h (6.2 mph), forwards and reverse,
- Backpacks, bags, etc. are not allowed to be attached to power chairs during play (essential equipment accepted e.g. Oxygen / feeds / ventilators etc),
- Chairs must not have any sharp surfaces or items that might become entangled with other powerchairs (inc. essential equipment),
- Lateral side supports (armrests) must be in place on both sides of the powerchair,
- Appropriate additional restraints are required equipment for those athletes who need them, these may include restraints for chest, shoulder, head, arm and / or leg (if an official observes a problem that affects the safety of the athlete or others on the field, the athlete may be requested to leave the field of play until appropriate additional restraints are in place),
- No part of the chair shall be constructed so as to be able to trap or hold the ball,
- Additional protection must be added to the powerchair which will prevent the ball from becoming trapped or the wheels riding over the ball,
- Rear protection can be added to a chair to protect the motors and minimise possible entrapment of the ball.

Rear Protection

- Rear protection should consist of unbreakable material and be securely attached to the powerchair,
- The bottom of the protection should be no more than 10 cm (4in) (and not less than 5 cm (2 in)) from the floor,
- Rear protection should be at least 20 cm (8 in) high but no more than 45 cm (18 in) from the ground,
- Protection surfaces shall be solid and not angled to hit the ball upwards,
- Rear protection surfaces shall be solid and not angled to hit the ball upwards all surfaces must be flat or convex (Convex attachments whether front or rear should be constructed in such a way that the section of the rear protection that protrudes the most is at the same height as the middle of the ball). Concave surfaces are not allowed. No part of the rear protection shall be constructed so as to be able to trap or hold the ball,
- Rear protection must not have any sharp surfaces or protrusions,
- Rear protection must not be wider than the widest point of the frame, drive wheels or tyres of the powerchair.

Overhang

- No part of the chair, seat, headrest or player should overhang the front and rear of the chair base. This is to avoid injury to the players from a player reversing into another player. This excludes the anti-tip wheels that may stick out beyond the back of the chair. If a player was to reverse into another player or the wall, the base of the chair shall be the first thing to make contact and not a player's backrest or headrest. See diagrams.



Footguards

- Footguards should consist of unbreakable material and be securely attached to the powerchair,
- Players must be able to maintain eye contact with the ball,
- The bottom of the footguards should be no more than 10 cm (4in) (and not less than 5 cm (2 in)) from the floor,
- The front of footguards should be at least 20 cm (8 in) high but no more than 45 cm (18 in) from the ground and players must always be able to maintain eye contact with the ball,
- Footguard surfaces shall be solid and not angled to hit the ball upwards, all surfaces must be flat or convex (Convex attachments whether front or rear should be constructed in such a way that the section of the footguard that protrudes the most is at the same height as the middle of the ball). Concave surfaces are not allowed. No part of the footguard shall be constructed so as to be able to trap or hold the ball,
- Footguards should not extend more than 33 cm (13 in) from the front of the forward wheels of the powerchair, when reversed. If a player's feet are too close to the guard or would extend beyond the footguard, up to an additional 10 cm (4 in) will be allowed beyond the furthest extension of the toes/feet,
- Footguards must not have any sharp surfaces or protrusions,
- Footguards must not be wider than the widest point of the frame, drive wheels or tyres of the powerchair,
- Footguards should not be narrower than the front casters (or attachments) of the powerchair,
- Additional protection must be added to the side of the footguard and/or additional areas on the powerchair (e.g. between the main wheels) if a ball can be trapped or held between the front wheels of a playing chair and the footguard.

SPEED TESTING

The Rule

Both the FIPFA Powerchair Football, Laws of the Game, Official Rules & Regulations, Approved December 2010 and the FIPFA Powerchair Football, Technical Supplement, Official Technical Specifications, v1 Dated June 2011 state:

"The maximum speed allowable during the match for powerchairs is 10 km/h (6.2 mph), forwards and reverse."

Pre Match Powerchair Speed Test Protocol

Prior to the match, all powerchairs should be tested for maximum speed. Whenever possible, speed should be tested in both forward and reverse direction.

All players must present themselves in match ready condition with guards on for match and for speed testing a minimum of 15 minutes before the scheduled kick off time. Each team may have one person designated to stand with the recording official to ensure that the results are accurately recorded.

In accordance with the competition rules, if a team has a spare powerchair(s) that may be used during the match this powerchair must also be tested during the pre-match testing. The powerchair does not have to be driven for the speed test by the player who might use it in the match.

Speed Adjustments

Powerchairs that have failed the pre match must be adjusted prior to retaking the test.

A retest is allowed only once after the initial fail. If the player fails after the retest then the player will miss the first half. It is possible for the player to rejoin the team in the second half following a successful test at the beginning of half time. If this test is failed, the player will miss the whole game.

After a Powerchair has completed the test it is forbidden for the program to be adjusted in any way.

During the game the actual Program Controller(s) must either be placed on the Score table and left for the duration of the game or given to a member of the crowd who is not part of the team / technical delegation.

Speed Violations

If, during the match, a referee believes that a player's powerchair exceeds the speed limit, or a coach registers a complaint with the referees before the end of the match about the speed of an opposing player's powerchair, the referee will finish the match, allowing the player to continue. The process for validating the speed of the powerchair(s) during and/or after a match will be defined by the respective competition or tournament authority. The next section describes a typical format and should be used if the competition authority has not specified a process.

Any adjustment or modification of a powerchair that affects its maximum speed after its pre match speed test and before completion of any post match speed testing must be notified to the referees. The powerchair must be retested before continuing in the match.

Post Match Powerchair Speed Test Protocol

In accordance with the competition rules, immediately at the end of the match the referee team will designate one (or more) player(s) from each team as well as any player(s) subject to the Speed Violation paragraph above for post match speed testing. These players must go directly to the speed testing area. The players will be tested preferably by the same officials who tested them before the match. If a spare powerchair is chosen for the post match speed test, the person who used it during the match must drive it for the post match test.

The motors of some brands of powerchairs go faster when they warm-up so an increase of 10% in the maximum speed is considered acceptable for post match speed tests.

The protocol for post match speed testing is the same as the protocol for pre match testing except for the allowable speed.

If a player fails the initial post match test speed they will be allowed a further 15 minutes cool down period and will be retested after this period.

If the chair fails the test after the further 15 minutes they will be allowed 1 hour in order for the chair to return to a suitable state.

At this stage the chair must not exceed the original speed of 10 km/h.

Failure after the 1 hour time limit will result in the player and team facing further sanctions as stated in the speed test protocol.

Any tampering with the powerchair will be considered a failed final test.

In accordance with the competition rules, failure of this final post match test will result in the player and team facing further sanctions.

Methods of Speed Testing

Three methods of testing the speed of the powerchairs and some of the pros and cons of each are:

1. A rolling road device, placing the drive wheels of powerchair in the device.
Pros: This is the preferred method as it can accurately test speed in both forward and reverse directions.
Cons: Bulky and heavy, difficult to transport.
The equipment must be adequately tested, checked and maintained to ensure the safety of the athlete and referees.
These devices are commercially available.
2. An electronic timing device which uses a laser light to measure the speed of the powerchair between start and finish gates.
Pros: Reasonably light and easy to transport.
Can accurately test speed in forward direction.
Cons: Accurate speed test in reverse direction is difficult.
These devices are commercially available.
3. Lay out start and finish gates and then time each powerchair as it runs from the start gate to the finish gate with stopwatches.
Pros: Light and very easy to transport.
Cons: Accurate speed test in reverse direction is difficult.
Stopwatch timing can lead to human error affecting the results.

Rolling Road Device

The rolling road device should be set up and operated as per its instructions.

Generally 5 assigned referees and / or trained speed testing officials will be required to perform the speed tests smoothly, safely and quickly.

Official 1 will assist the player manoeuvring the powerchair into position. This official will also stay behind the powerchair to ensure the safety of the player and officials. If required, the powerchair must be secured at front and back on the rolling road device so that it does not move but not so tight as to slow the chair during the test.

Officials 2 and 3 will operate the equipment to measure the speed on each drive wheel.

Official 4 will ensure that the player keeps the joystick at maximum speed during the test. This official will also call "3, 2, 1, NOW" so that officials 2 and 3 can take simultaneous readings on "NOW" of the speed at each drive wheel.

Official 5 will be the recording official who will record the score once a successful speed test has been completed. This official will also mark on the sheet / electronic media the number that the player plays at.

After a successful speed test the player who has passed the test will be guided towards a point on the field away from the players waiting to be tested.

Electronic Timing Device

The equipment should be set up and operated as per its instructions. Ensure that there is enough space at each end to allow the players to attain full speed before starting and to safely stop after finishing.

The principal for this speed test will generally be the same as for the Start and Finish Gates with Stopwatches except that the timing will be more accurate and repeatable. Note that an official will be required to observe the player to ensure he/she maintains full speed.

Start and Finish Gates with Stopwatches

The course should be laid out with the start and finish gates marked by taped lines (and optional cones) with enough space at each end to allow the players to attain full speed before crossing the start line and to safely stop after crossing the finish line

Powerchair Speed Test Course



Each player runs the course at full speed timed by two of the assigned referees or two trained timing officials. The timing officials also observe the player to ensure he/she maintains full speed. The averaged time must be no faster than the times listed in the table below. If there is a discrepancy between the two timers of more than .25 seconds the player must test again. If the averaged time is less than minimum time the powerchair must be adjusted and tested again.

**Table of Information for Speed Testing
by Start and Finish Gates with Stopwatches**

Course Length	Minimum Time		
	Pre Match	Post Match	Post 1 Hour Wait
50 feet	5.49 seconds	4.99 seconds	5.49 seconds
15 metres	5.40 seconds	4.91 seconds	5.40 seconds

The players will be started some distance from the start line of the timed course so that they cross the line at maximum speed and maintain their speed throughout the course, not slowing down until after crossing the finish line.

At the end of the course a recording official will record the player's number and times.

Any powerchair which has an averaged time lower than the listed time is exceeding the speed limit and must be adjusted and retested before being allowed to participate in the match.

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