# A Complete Guide to the Freestyle Football World Rankings

**The World Freestyle Football Association**

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For the Global Freestyle Football Community

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# 1. Introduction



The goal of the **World Freestyle Football Association** with the World Rankings (WR) is to create a comprehensive list of active, competitive freestylers, ranked according to their results across all official, WFFA-sanctioned Freestyle Football competitions - including National Championships, Pulse Series, World Opens, and World Championships.

The Rankings are based on the Elo system, a method used in sports like tennis and chess. Instead of simply rewarding the final position in a tournament, the Elo system evaluates each individual battle between freestylers and adjusts points based on the result and the relative strength of the opponent.

This means that a freestyler's position in the Rankings is determined by their performance against other competitors. Critically, victories against higher-ranked freestylers earn more points than wins against lower-ranked opponents - and defeats against stronger opponents cost far fewer points than defeats against weaker ones.

> **Core Principle**
> "The World Rankings are completely based on mathematics. They are just a snapshot of the competitive landscape at a particular moment in time, and may not reflect the energy and effort athletes put into a competition. The algorithm only looks at results: it's either a win or a loss, with no grey areas."
> **The Ranking of a freestyler is not who the freestyler is.**

Only competitions listed in the WFFA's official Ranked Competition table are considered for the World Rankings. All athletes who compete in Ranked competitions are automatically included. Freestylers who do not compete in Ranked events will not get any points.

# 2. The Elo Algorithm - Core Principles



The Elo algorithm is a ranking system used to evaluate the relative performance of players in one-on-one duels. The main idea is to give each freestyler a rating based on their past results, which then predicts future win probabilities and adjusts after every new battle.

### 2.1 Pre-Battle Evaluation

Before each battle, the algorithm compares the ELO scores of both athletes to predict the probability of victory for each one:

- If a freestyler has a much higher score than their opponent, the algorithm estimates a strong chance of winning.
- If both freestylers have similar scores, the chances of victory are roughly balanced.

### 2.2 Calculation of Expected Outcome

For each battle, the algorithm calculates the expected result - the estimated probability of winning. The formula is:

```
f(D) = 1 / (1 + 10^(-D/400))
```

Where D is the difference between the Elo scores of Athlete A and Athlete B, with a maximum cap of plus or minus 400 points. This cap is essential: without it, an extreme score gap would make the outcome statistically near-certain, destabilising the system. The cap ensures the theoretical maximum win probability is about 90.9%, keeping rankings meaningful at all levels.

**Example - two freestylers before their battle**

Athlete A: **2477 pts** - Athlete B: **2390 pts**
D = 2477 - 2390 = 87 pts (within the plus or minus 400 cap)
Probability A wins: **62%** - Probability B wins: **38%**

### 2.3 Post-Battle Adjustment: The Updated Equation

After the battle, both scores are updated based on the actual result versus the expected result:

- If the favourite wins: their score increases slightly - it was the expected outcome.
- If the underdog wins: their score increases significantly - they exceeded expectations. The favourite loses more points than they would against an equal opponent.

The score change is based on this equation:

$$E(n+1) = E(n) + K \times [R - f(D)]$$

| variable | meaning |
|---|---|
| E(n+1) | New ELO score after the battle |
| E(n) | Current ELO score before the battle |
| K | Coefficient determining how quickly scores evolve (see Section 3) |
| R | Result: 1 for a win, 0 for a loss |
| f(D) | Expected result - the win probability calculated before the battle |

Note: K is calculated independently for each freestyler, because it depends on individual factors like experience level and competition type.

**Full numerical example - Super Ball Top 32**

Ka = 10 (Athlete A is Elite: at least 10 battles AND ELO at least 2400)
Kb = 20 (Athlete B is Established: at least 10 battles AND ELO below 2400)

**If Athlete A wins:**
A = 2477 + 10 x (1 - 0.62) = 2477 + 3.8 = 2480.8 (+3.8 pts)
B = 2390 + 20 x (0 - 0.38) = 2390 - 7.6 = 2382.4 (-7.6 pts)

**If Athlete B wins:**
A = 2477 + 10 x (0 - 0.62) = 2477 - 6.2 = 2470.8 (-6.2 pts)
B = 2390 + 20 x (1 - 0.38) = 2390 + 12.4 = 2402.4 (+12.4 pts)

Beating a stronger opponent (B beats A) earns MORE points (+12.4 vs +3.8). Losing to a stronger opponent costs LESS (-6.2 vs -7.6).

# 3. The K Coefficient - How Points Are Calculated




The K coefficient is the central variable of the Elo system. It determines how much a single battle can move your ranking. K is not fixed - it is calculated individually for each freestyler, for each battle, using four factors:

$$K = C \times S \times L \times T$$

| Factor | Name | Role |
|---|---|---|
| C | Competition Type | How prestigious is the competition? (Standard Sanctioned, Continental, World) |
| S | Field Strength (FSI) | How competitive is the specific field of participants? |
| L | Freestyler Level | How experienced and established is this athlete? |
| T | Battle Type | Is this a direct 1v1 battle or a Circle group phase? |

## 3.1 C - Type of Competition

The type of competition sets the overall weight of the event. World events have the greatest impact on the rankings, followed by Continental and Standard Sanctioned events.

| Competition Type | Code | C value | Impact |
|---|---|---|---|
| Standard Sanctioned Event | N | 0.8 | Everything else |
| Continental | C | 0.9 | Pulse Series Event |
| World | W | 1.0 | WFFC and SuperBall |

## 3.2 S - Field Strength Index (FSI)

This is one of the most significant innovations in version 2.0. The competition difficulty (S) is no longer assigned manually. It is now computed automatically from the actual Elo scores of the participants - making it completely objective and data-driven. The FSI is a composite metric computed from three independent components, each measuring a different dimension of competitive strength.

## Component 1: Bracket Scale

$$S_{size} = clamp( \sqrt{N / 32}, 0.5, 1.2 )$$

This rewards events with larger brackets while preventing excessive inflation from very large amateur fields. N is the number of participants, and 32 is the reference bracket scale.

| Participants (N) | Field scale value | What it means |
|---|---|---|
| 8 athletes | 0.50 | Minimum - very small event |
| 16 athletes | 0.71 | Small competition |
| 32 athletes | 1.00 | Reference bracket - standard open |
| 64 athletes | 1.20 | Large open (cap reached) |
| 100+ athletes | 1.20 | Large event (cap reached) |

## Component 2: Field Quality

$$S_{quality} = clamp( (E_{avg_top} - 1800) / 600, 0.5, 1.2 )$$

Field quality is measured using the average Elo of the top group of participants - specifically, the top min(16, 25%) athletes by Elo score. This ensures that weak fields do not inflate difficulty, while strong international fields are rewarded.

| Average ELO of top group | Field quality | What it means |
|---|---|---|
| Below 2100 | 0.50 | Minimum - weak field quality |
| 2400 | 1.00 | Strong - top national level |
| 2500 | 1.17 | Strong World-level field |
| 2600+ | 1.20 | Maximum - elite international |

## Component 3: Elite Density

$$S_{elite} = clamp( 1 + 0.5 \times P_{elite}, 1.0, 1.3 )$$

Elite density reflects how many top-level athletes (ELO at least 2400) are present in the competition. Even if the event is small, a high concentration of elite athletes significantly raises the stakes.

| % athletes with ELO at least 2400 | Elite density value | Scenario |
|---|---|---|
| 0% | 1.00 | No elite athletes present |
| 20% | 1.10 | One in five is elite - solid field |
| 40% | 1.20 | Very strong elite presence |
| 60%+ | 1.30 | Ultra-elite event (maximum) |

## Special Rule: The Exclusive Elite Event

If both the field-quality factor and the elite-density factor reach their maximum values simultaneously (field quality at least 1.2 and elite density at least 1.3), then the field-scale factor is automatically set to 1.0 - regardless of the number of participants. This handles the case of a deliberately small but ultra-elite event (for example, a World Finals with 8 top-ranked athletes), where small size is a feature, not a limitation.

## Final competition strength factor

$$S_{actual} = clamp( S_{size} \times S_{quality} \times S_{elite}, 0.3, 1.2 )$$

**Real-world example - 107-participant competition**

```
N = 107 participants, top_n = min(16, 25% of 107) = 16
E_avg_top = 2445.85 (average ELO of the 16 highest-ranked participants)
elite_count = 19 athletes with ELO at least 2400; P_elite = 17.76%

S_size = clamp( sqrt(107/32), 0.5, 1.2 ) = clamp(1.83, ...) = 1.20
S_quality = clamp( (2445.85-1800)/600, 0.5, 1.2 ) = clamp(1.08, ...) = 1.08
S_elite = clamp( 1 + 0.5 x 0.1776, 1.0, 1.3 ) = clamp(1.09, ...) = 1.09
S_actual = clamp( 1.20 x 1.08 x 1.09, 0.3, 1.2 ) = clamp(1.41, ...) = 1.20
```

**Why is FSI better than manual assignment?**

Previously, competition strength relied on manually assigned difficulty categories, which could be subjective and inconsistent across events.
Now, if 20 top-50 world freestylers compete at a regional Open, the system automatically detects this through their Elo scores and raises the K coefficient accordingly. A small invitational with the top 8 athletes in the world gets a higher S than a 200-person amateur tournament. The math reflects reality.

### 3.3 L - Level of the Freestyler

The L coefficient serves a dual purpose: it allows newcomers to find their correct level quickly (high K = fast movement), while protecting established athletes from excessive score swings (low K = stable rating).

| Level | Condition | L value | Effect |
|---|---|---|---|
| New | Fewer than 10 battles | 40 | Fast adjustment - ranking settles quickly |
| Established | At least 10 battles AND ELO below 2400 | 20 | Moderate movement - still developing |
| Elite | At least 10 battles AND ELO at least 2400 | 10 | Stable - small battles, earned rank is protected |

**Important - how battles are counted**

Circles count as 1 battle in the battle counter, regardless of circle size.
A circle of 3 athletes generates 3 individual duels in the results export, but each athlete receives only +1 in their battle count. A circle of 4 athletes generates 6 individual duels in the results export, but each athlete receives only +1 in their battle count.
This is intentional: without this rule, participating in multiple circle phases would artificially inflate the battle counter and prematurely push athletes to the Elite L level. The system identifies circle groups using union-find on circle-type battle pairs - all players connected through shared C-type battles form one group = one battle.

### 3.4 T - Type of Battle

The T coefficient reflects the fundamental difference between a direct 1v1 duel and a circle group phase. While both types affect rankings, a direct battle is a cleaner, higher-stakes confrontation.

| Battle Type | Code | T value | Notes |
|---|---|---|---|
| 1 vs 1 Battle | B | 1.0 | Full impact - direct head-to-head duel |
| Circle | C | 0.3 | Reduced impact - group phase, multiple opponents simultaneously |

The reduced weight for Circles (T=0.3) does not mean circles are unimportant. It means that the ELO adjustments from circle battles are moderated - a loss in a circle hurts less than a direct 1v1 defeat, and a win earns fewer points. This is fair because circle results are inherently less definitive than a straight head-to-head.

# 4. Circles - The Freestyle Football Specificity




The unique feature of Freestyle Football competition is the Circle stage, where 3 or 4 freestylers face each other simultaneously. The World Ranking system translates each Circle result into a series of individual head-to-head duels, preserving the integrity of the Elo algorithm.

### How a Circle is translated into duels

If the Circle result is: 1st: Athlete A, 2nd: Athlete B, 3rd: Athlete C, 4th: Athlete D - the system interprets this as:

- Athlete A beats Athlete B
- Athlete A beats Athlete C
- Athlete A beats Athlete D
- Athlete B beats Athlete C
- Athlete B beats Athlete D
- Athlete C beats Athlete D

| Circle group | Individual duels generated | Battle count per athlete |
|---|---|---|
| Circle of 3 athletes | 3 duels | +1 battle (NOT +3) |
| Circle of 4 athletes | 6 duels | +1 battle (NOT +6) |

Each of these individual duels is processed through the Elo formula with T=0.3, reducing the weight of each result. The T coefficient ensures that circle phases have a meaningful but controlled effect on rankings - they matter, but they do not dominate.

**Why does 1st place in a Circle gain more points than other positions?**

The 1st place athlete wins all their duels (wins against B, C, and D). The 2nd place athlete wins 2 duels but loses 1. The 3rd wins 1 and loses 2. The 4th loses all. Since each duel is processed individually through the Elo formula, finishing first earns points from multiple victories simultaneously. The cumulative effect correctly rewards dominant circle performance.

# 5. New Entrants to the World Ranking



Any freestyler competing in an official WFFA-sanctioned event is automatically included in the World Rankings. For a new athlete entering a competition, the process depends on their status:

### Case 1: The freestyler was already in the ranking

The person joins the World Ranking with their existing points and keeps their battle history. Their position reflects their accumulated competitive record.

### Case 2: The freestyler is entirely new

The freestyler enters the World Ranking with a fixed starting score of **2,300 points** - applicable to both the men's and women's divisions. This score is defined by the WFFA and can evolve independently for each division as the sport develops.

As they battle, the high L coefficient for new athletes (L=40) ensures their ranking adjusts rapidly:

- If they perform better than the average level - they climb quickly.
- If they perform below the average level - they drop accordingly.

The system self-corrects fast for new entrants. Within a few competitions, their ranking will reflect their actual level.

> **Why a fixed starting score (2300 pts) instead of the ranking average?**
>
> The ranking average changes as the field grows and improves. Using it as a starting point creates unpredictability: a new athlete entering during a period of rapid growth would start much lower than one who entered earlier. A fixed score ensures consistency and fairness. Every new athlete starts from the same point, regardless of when they first compete. The 2,300-point starting value was chosen to place newcomers slightly below the current field average, giving them room to establish their ranking without immediately disrupting the top of the table.

# 6. Inactivity Penalty - Keeping the Ranking Alive

The World Ranking is a snapshot of the current competitive landscape. It must reward athletes who are out there competing - not allow inactive athletes to permanently hold positions they earned years ago without risking anything.

### The problem without an inactivity mechanism

Active athletes constantly risk their points every time they compete. A single loss can cost significant ranking positions. Meanwhile, an athlete who stops competing faces no such risk - they can hold their rank indefinitely, creating a structural advantage for inactivity over participation.

### How the Inactivity Penalty works

| Parameter | Value | Detail |
|---|---|---|
| Grace period | 12 months (365 days) | Counted from the date of the athlete's last official competition |
| Decay trigger | Day 366+ | After 12 full months without a recorded battle |
| Decay rate | -0.25% per month | Formula: current score multiplied by (1 - 0.0025) |
| Application date | 1st of each month | Applied automatically at system startup if due |
| How it stops | Next official battle | Any ranked competition resets the 12-month clock |
| Tracking | Per-athlete date + name | System stores the date and name of the last competition |

#### Why 0.25% and not a flat point deduction?

The men's division currently spans from about 2244 to 2639 pts - a tight competitive band of less than 400 points. The women's division is similarly compressed. A flat deduction (for example, -15 points per month) would be too aggressive at the lower end of the field, and could mathematically push former champions below the lowest active competitors within a single year - effectively erasing years of competitive history.

0.25% is proportional. It removes roughly:
- About 6.6 pts/month for the current men's #1 (about 2639 pts)
- About 5.6 points per month for an athlete at 2250 pts

This allows active competitors to naturally and gradually climb past inactive ones, without completely destroying their historical compilation of results. After 12 consecutive months of decay, an athlete loses approximately 74 points - meaningful, but not catastrophic.

The inactivity penalty is also directly tied to the tracking of each athlete's last competition. The system stores both the date and the name of the last official competition for every ranked athlete. This data serves as the reference point for the 12-month grace period calculation.

# 7. Abandoning the Preliminary Ranking

### 7.1 Why a Preliminary Ranking Was Needed at Launch

The Elo algorithm requires initial scores to function. Without starting values, it is impossible to calculate expected outcomes, K factors, or any meaningful probability of winning. Every athlete needs a number to begin from.

When the WFFA World Rankings were first launched, a preliminary ranking was constructed based on competitive results from 2020, 2021, and 2022. This provided every known competitive freestyler with a starting score that roughly reflected their performance at the time. It was the correct decision for the launch:

it allowed the system to begin immediately with data that had some competitive meaning, rather than assigning arbitrary equal scores to everyone.

### 7.2 Why It Is No Longer Used

Two major structural problems emerged from continued dependence on the preliminary ranking:

| Problem | Explanation | Consequence |
|---|---|---|
| Significant growth in athlete numbers | The number of competitive freestylers worldwide has increased dramatically since 2022. Many of today's most active and talented athletes were not competing, not yet discovered, or not yet ranked during the 2020-2022 period. | These athletes could never have received a fair preliminary score - they simply did not exist in the dataset. |
| Dramatic rise in competitive level | The global level of Freestyle Football has risen considerably. A top-10 performance in 2021 does not represent the same relative ability as a top-10 performance today. | Historical results are no longer valid indicators of current competitive ability. Using them inflates scores for athletes whose level may not match their ranking. |
| Structural unfairness | Long-time athletes retained a built-in ranking advantage based on results that may be 4-5 years old. New athletes started at a disadvantage, regardless of their current level. | Active athletes today are penalised for not having competed in 2020-2022. This is fundamentally at odds with a system designed to reward current performance. |

The conclusion is clear: the preliminary ranking had served its purpose at launch, but continuing to rely on it created systematic unfairness. It created an advantage for historical participation and a disadvantage for current, active competition.

> **The Clean Base: January 1, 2026**
>
> The World Ranking version 2.0 establishes a clean base effective January 1, 2026. All athletes carry forward their most recently calculated Elo score from version 1, but the system no longer depends on or references the original 2020-2022 preliminary ranking. From this date forward, only current competition results shape the rankings.

## 8. Advantages of the System



**Fairness**

A freestyler who consistently beats weaker opponents gains very few points, while one who defeats stronger opponents is rewarded proportionally. The difficulty of every battle is automatically measured and reflected in the outcome.

**Objectivity**
The algorithm considers only results: a win or a loss. It does not account for effort, training hours, travel, or popularity. The system is blind to everything except competitive performance on the day.

**Dynamism**
The ranking evolves after every single competition. Every battle counts and can shift the global standings. There is no concept of a permanent, safe position in the World Ranking.

**Automatic Strength Measurement**
The Field Strength Index ensures that competition difficulty is always objective. There is no subjective classification of events - the athletes' own Elo scores define how competitive the field is, and therefore how much each result is worth.

**Self-Correcting for New Entrants**
New athletes with high L values (L=40) adjust quickly to their correct level within a small number of competitions. The system does not require years of history to place a talented newcomer where they belong.

**Adaptability**
All parameters of the system - C coefficients, FSI thresholds, L boundaries, T values, decay rate, starting score - can evolve independently as the sport grows, the community provides feedback, and the WFFA refines its approach.

## 9. Summary of All Possibilities




This section summarises the key outcomes the World Rankings system produces for participating freestylers:

| Situation | What happens to your ranking |
|---|---|
| Win a 1v1 battle against a higher-ranked opponent | Large ELO gain - rewarded for exceeding expectations |
| Win a 1v1 battle against a lower-ranked opponent | Small ELO gain - expected result, modest reward |
| Lose a 1v1 battle to a higher-ranked opponent | Small ELO loss - expected result, minimal cost |
| Lose a 1v1 battle to a lower-ranked opponent | Large ELO loss - failed to meet expectations |
| Finish 1st in a Circle (3 or 4 athletes) | Gain points from all victories, weighted at T=0.3 |

| Situation | What happens to your ranking |
|---|---|
| Finish last in a Circle | Lose points from all defeats, weighted at T=0.3 |
| Compete in a World event with elite athletes | High C (1.0) + high FSI = maximum K = maximum impact |
| Compete in a Standard Sanctioned event | C (0.8) + FSI calculated from the actual field = K reflects the competition context |
| Do not compete for more than 12 months | -0.25% ELO per month from month 13 onwards |
| Re-enter competition after inactivity | Decay stops immediately - normal Elo calculation resumes |
| Enter the WR as a brand new freestyler | Start at 2,300 pts, adjust quickly thanks to high L=40 |
| Beat athletes with a much higher ranking | Disproportionate ELO gain - the system rewards upsets |

# 10. What's New - Version 2.0 Changelog

The following changes were introduced effective January 1, 2026, and documented on 20 March 2026. Each change is detailed in its corresponding section of this guide.

| Feature | Version 1 (before January 2026) | Version 2 (from January 2026) |
|---|---|---|
| Competition Strength (S) | Competition difficulty relied on manually assigned categories, which could be subjective and inconsistent across events. | Replaced by the Field Strength Index (FSI): automatically computed from participants' actual ELO scores. Three components: bracket scale, top-group quality, and density of athletes at least 2400. Fully objective and data-driven. (See Section 3.2) |
| Circle Battle Counting | Each individual duel row in the results export counted as a separate battle in the athlete's battle counter. A circle of 4 = 6 battles added to the count. | Circles are identified as groups (union-find on C-type pairs). Each group = +1 battle per athlete, regardless of circle size. A circle of 3 and a circle of 4 both count as exactly 1 battle. (See Sections 3.3 and 4) |
| Inactivity Penalty | No mechanism. Athletes could hold their ranking indefinitely without competing, gaining an unfair structural advantage over active competitors. | -0.25% ELO per month after a 12-month (365-day) grace period. Applied on the 1st of each month. Stops immediately upon return to competition. Proportional design preserves historical results. (See Section 6) |
| **Feature** | **Version 1 (before January 2026)** | **Version 2 (from January 2026)** |
| Preliminary Ranking | Rankings initialised based on 2020-2022 competition results. Long-time athletes retained a structural advantage from historical data. New active athletes faced a built-in disadvantage. | Clean base established on 1 January 2026. Scores from version 1 are carried forward, but no dependence on the original preliminary ranking. Only current results matter from this date. (See Section 7) |
| Newcomer Starting Score | New athletes entered at the dynamic current average of the ranking (approximately 2,354 pts for men) - changed with every new entrant, creating inconsistency. | Fixed starting score of 2,300 pts for both men and women divisions. Can evolve independently for each division. Predictable, consistent, and fairer for all new entrants. (See Section 5) |

The World Rankings programme has been developed by the World Freestyle Football Association (WFFA), a non-profit global federation registered in Spain, Carrer Provenca 278, 1B, 08008 Barcelona, Catalonia.