

# Rink-Hockey Rankings

Rules for calculations (valid after 30.09.2014)

Revised at 30.09.2024

## 1. Basic Theory

The Rankings are calculated according to the ELO Rating System<sup>1</sup>. This rating system is applied by several sports to calculate performances of players or teams. This is based on a logistical distribution statistics<sup>2</sup>, where, for each difference of points between opponent teams a certain probability of victory is estimated. The table for each probability of victory is the following:

p	d <sub>p</sub>	p	d <sub>p</sub>	p	d <sub>p</sub>	p	d <sub>p</sub>	p	d <sub>p</sub>	p	d <sub>p</sub>
1.0	?	.83	273	.66	117	.49	-7	.32	-133	.15	-296
.99	677	.82	262	.65	110	.48	-14	.31	-141	.14	-309
.98	589	.81	251	.64	102	.47	-21	.30	-149	.13	-322
.97	538	.80	240	.63	95	.46	-29	.29	-158	.12	-336
.96	501	.79	230	.62	87	.45	-36	.28	-166	.11	-351
.95	470	.78	220	.61	80	.44	-43	.27	-175	.10	-366
.94	444	.77	211	.60	72	.43	-50	.26	-184	.09	-383
.93	422	.76	202	.59	65	.42	-57	.25	-193	.08	-401
.92	401	.75	193	.58	57	.41	-65	.24	-202	.07	-422
.91	383	.74	184	.57	50	.40	-72	.23	-211	.06	-444
.90	366	.73	175	.56	43	.39	-80	.22	-220	.05	-470
.89	351	.72	166	.55	36	.38	-87	.21	-230	.04	-501
.88	336	.71	158	.54	29	.37	-95	.20	-240	.03	-538
.87	322	.70	149	.53	21	.36	-102	.19	-251	.02	-589
.86	309	.69	141	.52	14	.35	-110	.18	-262	.01	-677
.85	296	.68	133	.51	7	.34	-117	.17	-273	.00	?
.84	284	.67	125	.50	0	.33	-125	.16	-284	?	?

For example (in yellow in the above table), if team A has more 141 points than team B, this means that it has 69 % probability of victory, and B has 31 %.

<sup>1</sup> [http://en.wikipedia.org/wiki/Elo\\_rating\\_system](http://en.wikipedia.org/wiki/Elo_rating_system)

<sup>2</sup> [http://en.wikipedia.org/wiki/Logistic\\_distribution](http://en.wikipedia.org/wiki/Logistic_distribution)

## 2. How it works with Rink-Hockey competitions

When applied to Rink-Hockey results, the following calculations are done:

- a. For each game, the difference of points and accordingly the probability of victory for each team, is computed;
- b. According to the result of each game, the gain or lost of points for each team is calculated, multiplying the difference (Result – Probability) by a factor K. For this purpose it is considered:
  - i. Victory – 1 point; draw – 0,5 points; defeat – 0 point; victory after extra time – 0,75 points; defeat after extra time – 0,25 points; victory after penalties/direct kicks – 0,6 points; defeat after penalties/ direct kicks – 0,4 points.
  - ii.  $K = 40$  for official national competitions of clubs and official international competitions between nations teams;  $K = 60$  for official international competitions of club teams;  $K = \frac{1}{2}$  of all previous values, when games are friendlies or non-official competitions.
  - iii. For games between national teams, except for the cases of teams of Portugal, Spain, Italy, Argentina, Chile, Angola, France, Germany, Switzerland and Brazil, the results are considered also as an additional virtual result between one of the 3 first rated club teams of each opposing nation. This allows, for countries less active in international club competitions, to evaluate more accurately the strength of the corresponding club teams.
- c. In general, the calculation is done on a game by game basis, according to the chronology of the games. For some less important leagues<sup>3</sup>, the rate of each team is calculated by the table of the league at the end of the reporting period, using the same probability distribution of the ELO system;
- d. For new teams entering the ranking, an initial rate value is calculated according to the performance obtained against rated opponents, during the first 5 games. After that initial evaluation period, normal way of calculation is considered.

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<sup>3</sup> For exemple leagues of France after 2eme Division, Catalunya after Nacional Catalana, Switzerland 1.Ligue, Germany Regional leagues, Chile – Liga Central.

### **3. Types of Rankings and competitions to be considered**

#### **a. Rankings**

The Rankings presently calculated and diffused through <http://rink-hockey.net/> are:

- World Senior Men Club Teams
- World Senior Women Club Teams
- National Men Teams (senior, u23, u20 and u17)
- National Women Teams

#### **b. Competitions**

World – World Championships, Nations Cup, Friendly Tournaments

Europe – European Championships; Club cups and leagues, Friendly Tournaments

South-America – Club and national championships, Friendly Tournaments

Asia – Asian Games, Friendly Tournaments

Africa – African Nations Championship, Friendly Tournaments

Portugal – All official national senior competitions + regionals

Spain - All official national senior competitions + regionals

Italy - All official national senior competitions

France – Elite Division, 2eme Division, 3eme Division, regionals, cup

Germany – 1 Bundesliga, 2 Bundesliga, regionals, cup

Switzerland – LNA, LNB, 1. Ligue, cup

Netherlands - All official senior competitions

England – Premier League, Division One, Regionals, cup

Austria - All official senior competitions

Argentina – Superliga Nacional, Official San Juan, Mendoza, Buenos Aires (Primera), Parana + Argentino

Chile – Liga de Honor + Liga Cental + Liga Sur

Brazil – Brasileiro + regionals

Colombia - Interclubs

USA – Nationals + regionals

Angola - All official senior competitions

Mozambique - All official senior competitions

Japan - All official senior competitions

Australia - All official senior competitions

New Zealand - All official senior competitions

Egypt - All official senior competitions

Israel - All official senior competitions

Results for other countries (Mexico, Uruguay, Taiwan, India, Ireland, South Africa, Pakistan and others) may be computed if available.

For all countries, also friendly games and tournaments are considered.

#### **4. Ranking lists**

Ranking lists will be published at the following dates:

Men Club Teams	01.01; 01.04; 01.07 and 01.10 each year
Women Club Teams	01.01 and 01.07 each year
Men National teams	After major competitions
Women National Teams	After major competitions

Teams will be excluded from lists when they are no longer active, or if no results for that team were considered during the last 12 months (36 months for nations teams)

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