Solvers' rating

The rating is an integer numerical value which shows the solving strength of a solver. A solver gains it by solving at two approved / rated tournaments.

A rating can be gained at the WCSC, ECSC, WCCC Open, or other tournaments which fulfil definite criteria. Ratings are calculated after each tournament. A rating list is published four times a year. It is calculated on the basis of the results of solving tournaments completed (including the report) by the end of March, June, September and December. If a tournament starts in one period and is finished in another period, the ratings of solvers are taken from the rating list valid at the start of the tournament, and the tournament is included in the period when it is finished. In case that at the same tournament different tables are produced (like one extra for juniors) ratings are calculated only for the major tournament.

The Solving Tournament Manager (STM) software is used for the issue of the quarterly rating lists.

The use of the STM software is recommended for all rated solving tournaments and it is mandatory for WCSC and ECSC, as well as for their open solving tournaments and for ISC (central controllers only).

Criteria for acceptability of tournaments at which ratings and norms can be gained

R1	At least 10 solvers (15 rated solvers from at least 3 countries for gaining norms) with a full rating must compete in the tournament.
R2	The selected problems should be originals or originally published problems more than 5 calendar years before the tournament. The selected problems should show a clear theme and a good level of quality and difficulty and should represent different styles.
R3	There should be at least 12 problems of different types to solve.
R4	Problems for solving can be chosen from seven groups: twomovers, threemovers, moremovers, endgames, helpmates, selfmates and fairy chess problems.
R5	At the tournament at least 5 groups must be represented.
R6	No group can be represented by more than 3 problems.
R7	The tournament may be divided into several rounds and/or days.
R8	The correct and complete solution or cook of all problems scores 5 points each. Points for partly solved problems can only have a maximum of two decimal places.
R9	When fairy problems are included at the tournament it is recommended that the corresponding fairy conditions are announced at least two months beforehand. This is obligatory for the WCCC/ECSC Open and it must be announced on the WFCC site and on the WCCC/ECSC organiser's website.
R10	All tournament documentation (name of tournament director, diagrams of problems, solutions, complete list with detailed results per problem and possible complaints, etc.) should be sent to the responsible WFCC representative (committee) within 5 days (10 days for multiple-locations tournaments) after the end of the competition.

R11	In addition the solving sheets have to be kept by the tournament director for at least 4 weeks to enable probing possible issues.

The representative (committee) has the right to confirm or not the acceptability of the tournament and determines the tournament coefficient. The final decision is approved by the WFCC.

Criteria for gaining norms

N1	Norms for the titles International Solving Grandmaster of the FIDE (GM), International Solving Master of the FIDE (IM), FIDE Solving Master (FM) can be gained in a tournament if at least 5 solvers with current rating of 2550 / 2450 / 2350 respectively participate in it.
N2	Norms cannot be gained at tournaments which take place in multiple locations.
N3	A solver obtains a GM / IM / FM norm when he/she achieves a performance rating of at least 2650 / 2550 / 2450. The solver must be placed within the number of solvers with the qualifying rating of 2550 / 2450 / 2350 (i.e. at least sixth place when there are 6 solvers with the qualifying rating of 2550 / 2450 / 2350).

Criteria for gaining titles

T1	International Solving Grandmaster of the FIDE: A solver must gain a norm 3 times (at least once at the WCSC or ECSC) and achieve a rating of **2550**.
T2	International Solving Master of the FIDE: A solver must gain a norm twice and achieve a rating of **2450**.
T3	FIDE Solving Master: A solver must gain a norm twice and achieve a rating of **2350**.
T4	The obligatory rating may be achieved anytime (i.e. at any official rating list or as a current rating after a tournament).

(This version of the criteria was accepted at the PCCC Congress in Wageningen 2006. A small change in the criteria was accepted in Rhodes 2007. Further changes were accepted in Crete 2010 and Berne 2014.)

Rules for rating calculation

The basis for calculating ratings at a solving tournament is the average of ratings of all solvers with ratings (*AveRat*) and the average of achieved results of those solvers (*AveRes*).
AveRat = average rating of all solvers with ratings (subtracting by 1600)
AveRes = average result of all solvers with ratings

A rating for a solver without a rating:

It is calculated as a **performance rating** (*PerfRat*), i.e. a temporary rating achieved by a solver at a tournament upon the formula:

$$PerfRat = AveRat \times Res / AveRes$$

Res = result of a solver achieved at a tournament

Solver's first rating is called half-rating. At his next tournament he gets another half-rating. The average of all half-ratings is calculated and put to the rating list.

Change of a rating for a solver with rating:

The expected result (*ExpRes*) is calculated for all solvers with ratings upon the formula:

$$ExpRes = AveRes \times Rat / AveRat$$

Rat = rating of a solver from the last rating list

The expected result might exceed 100% of the winner's result. In such a case the corrections (*CorrExpRes* and *CorrPerfRat*) are made upon the formulas:

$$CorrExpRes = AveRes + (ExpRes - AveRes) \times (MaxRes - AveRes) / (MaxExpRes - AveRes)$$

CorrExpRes = corrected expected result (cannot exceed 100% of the winner's result)

MaxRes = result of the winner

MaxExpRes = the highest expected result before correction (higher than the winner's result)

*CorrPerfRat = AveRat + (PerfRat – AveRat) / (MaxPerfRat – AveRat) * (MaxRes * MaxRat / MaxCorrExpRes – AveRat)*

CorrPerfRat = corrected performance rating

MaxRat = the highest solver's rating

MaxPerfRat = performance rating of the winner

MaxCorrExpRes = the highest corrected expected result

Change of rating (*ChOfRat*) is calculated from the difference between the expected result and the achieved result upon the formula:

$$ChOfRat = KT \times (Res - ExpRes)$$

or in a case of correction:

$$ChOfRat = KT \times (Res - CorrExpRes)$$

KT = tournament coefficient (from 1 to 4)

If the problems at the tournament are not given 5 points each the KT is corrected upon the formula:

$$CorrKT = KT \times 5 \times N / AbsMaxRes$$

CorrKT = corrected tournament coefficient

N = number of problems at the tournament

AbsMaxRes = theoretical MaxRes at the tournament

New rating is calculated upon the formula:

$$NewRat = Rat + ChOfRat$$

All calculations are made to the second decimal place. Ratings are published as integers. For publishing use the ratings are increased by 1600.

After five years of non-participation in rated tournaments, a solver will be expelled from the rating (half-rating) list. Should he participate in the future, his original rating (but not half-rating) will be accepted.

Ratings are calculated after each tournament. An updated rating list is published four times a year (at 1st January, 1st April, 1st July and 1st October).

ANNEX

Tournament coefficient

Category	Coefficient	Criteria for tournament
A frame for coefficients for tournaments organised according to the WCSC rules:		
W40	4	WCSC, ECSC
W30	3	WCSC-type tournament for norms
W25	2.5	participation of at least 5 solvers with a rating of 2300 or higher
W20	2	participation of at least 5 solvers with a rating of 2200 or higher

W15	1.5	participation of at least 5 solvers with a rating of 2100 or higher
W10	1	Other tournaments organised according to the WCSC/ECSC rules
A frame for coefficients for tournaments organised according to other rules:		
O20	2	WCCC and ECSC Open
O15	1.5	Participation of at least 15 rated solvers from at least three different countries and with at least 5 solvers with a rating of 2350 or higher
O10	1	Other tournaments

The representative (committee) has the right to confirm or not the acceptability of the tournament and determines the tournament coefficient.

This version of the rules was accepted at the PCCC Congress in Wageningen 2006. A change in the publication of the rating list was accepted in Rhodes 2007.

A change regarding negative *NewRat* was accepted in Rio 2009.
Changes of the criteria for the acceptability of tournaments at which ratings and norms can be gained were accepted in Berne 2014, in Dresden 2017 and in Ohrid 2018.