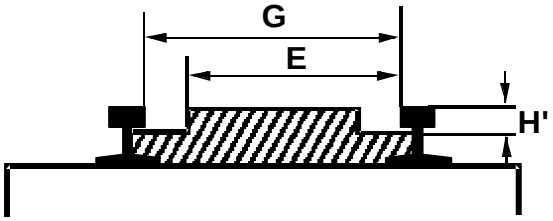
Binding Standard **Dimensions in mm** **Edition 2009** (20111116)
(First English Edition)

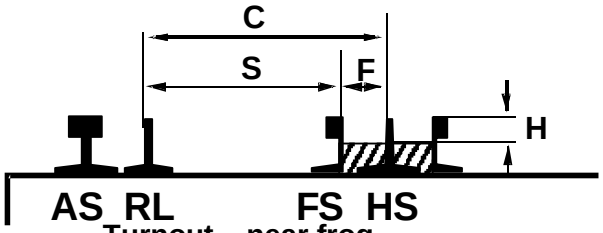
This standard is the basis for the manufacture and testing of tracks, turnouts, and intersections. It is applicable to track layouts with minimum curve radii per NEM 11. The NMRA standard S 3, S 4 and the NMRA recommendation RP 25 were considered insofar as possible.

The dimensions deviate from the scale reductions from prototypes in the interest of operational reliability.

AS Outer Stock Rail FS Wing Rail
RL Guard Rail HS Point of Frog



Track



Turnout – near frog

The horizontal dimensions of this standard are measured from the vertical edges of the rail profile.

Dimensions

Gauge G [2]		C [3]		E [4]	S		F [5]		H [6]
Nominal	max	min	max [1]	max [1]	min	max [1]	min [1]	max	min
6.5	6.7	5.9	6.0	5.6	5.1	5.2	0.7	0.75	0.6
9	9.2	8.1	8.2	7.8	7.2	7.3	0.8	0.9	0.9
12	12.2	11.0	11.1	10.7	10.0	10.1	0.9	1.0	1.0
16.5	16.8	15.3	15.5	15.0	14.0	14.2	1.1	1.3	1.2
22.5	22.8	20.9	21.1	20.5	19.3	19.5	1.4	1.6	1.4
32	32.3	30.0	30.3	29.4	28.0	28.3	1.7	2.0	1.6
45	45.3	43.1	43.4	42.5	41.1	41.4	1.7	2.0	1.6
64	64.4	61.6	61.8	60.9	59.1	59.3	2.3	2.5	2.0

Remarks:

1) Achieving these values results in the greatest prototypical similarity.

2) Strive to match the nominal values on straight track; it is also always the minimal value. With smaller radius curves and on turnouts, it is suitable to widen the gauge for rolling stock with a large wheelbase.

3) The limit C_{min} only applies in the critical area of the guard rails.
It is not permitted to arbitrarily combine limits for dimensions ***F***, flangeway, and ***S***, span, in order to stay

within the dimensional limits for ***C***. ***C*** is the primary controlling dimension.

4) The limit E_{max} applies with guard rails as utilized in small radius curves, with guard rails on bridges, in the flangeways of grade crossings, for the distal turnout point blades (see NEM 124), and for the ends of wing rails in turnouts, to ensure that the rear surface of the wheels do not contact the flangeway edges. However if the flangeway is defined on the interior by a rail of opposing polarity, for example a distal turnout point blade, then E_{max} should be reduced by 0.2 mm.

5) The limit F_{max} at the frog may be exceeded if it is intended that the wheels run on the flange.
Adherence to the maximum flangway width at the frog enables operation with the community of wheels whose flange have varying heights ***D*** (per NEM 310).
If, due to wheel set rotation, it is necessary to exceed the dimension F_{max} in the flangeway region and thus analogously reduce the value ***S***, then the minimum flange height ***D*** is allowed to only be 0.1 mm less than the maximum. The flangeway depth H_{max} is then only allowed to be ≥ H_{min} + 0.1 mm. Track with enlarged flangeway widths ***F*** are not suited for rolling stock with NMRA standard wheels.
The necessary flangeway width at the frog, ***F***, is determined by the rotation of the wheel set in the track curve. The following benchmarks apply:
R > 55 ***G***: Minimal dimension ***F***
R > 42 ***G***: Average of dimensions F_{min} and F_{max}
R > 30 ***G***: Maximum dimension ***F***
R < 30 ***G***: Special determination of F, when vehicles with large fixed wheel base are used.

Beyond the frog flangeways, the applicable value at the guard rail is: F_R = ***G*** - ***C*** and in free flangeways: ***F' = G*** - ***E***.

6) H_{min} applies only for the depth of the flangeway at the frog. Furthermore it is necessary to maintain a depth of ***H'*** > ***1,3 H*** below the running surface (RS). The edges of nonmetallic frogs should be 0.1 mm below RS.