



Flatness Tolerances

Technical Resources—Perforated Metal Standards

Flatness is the deviation of the surface of a sheet from a perfectly flat surface. Flatness is measured by placing a sheet on a horizontal flat surface and measuring the distance to the highest point of the sheet from the flat surface, then subtracting the material thickness.

For material 10' in length or less the flatness variation should not exceed the amount shown in the tables. For material over 10' in length, the variation in flatness should not exceed the table values in any given 10' section. For parts under 36" in both width and length, flatness should not exceed $\frac{1}{4}$ ". For parts whose length is between 36" and 72", the flatness variation should not exceed 75% of the flatness of a 10' sheet for that given width.



THREE LEVELS OF AVAILABLE QUALITY:

1. Commercial
2. Superior
3. Special

REQUIREMENT NOTES:

If your requirement is within one of the following categories, it is recommended that you discuss the flatness requirements of your perforated metal with Hendrick Manufacturing Company.

1. Perforated sheets with other than "safe" or "no" margins .
2. Stresses imposed during the perforating process may cause a deviation in the flatness of the edges. The wavy edge may occur in perforated sheets and coils with wide or unequal wide unperforated blank edges on the long side or when making special perforations, such as countersunk or ringed perforations , especially when using soft materials such as aluminum or copper.
3. Blank areas required within perforated area .
4. Perforated sheets with very large percentage of open area .
5. When the hole diameter and/or bar between the hole is less than the material thickness.
6. Special alloys.

UP TO 36" WIDTH

Thickness Range	Commercial Quality Tolerance	Superior Quality Tolerance	Special Quality Tolerance
28-20GA	3/8"	5/16"	-
19-16GA	1/2"	7/16"	-
15-12GA	5/8"	1/2"	-
11GA-1/4"	5/8"	1/2"	-
5/16-3/8"	9/16"	15/32"	-
7/16"-1/2"	1/2"	7/16"	-
9/16"-3/4"	7/16"	11/32"	-

OVER 36" - 48" WIDTH

Thickness Range	Commercial Quality Tolerance	Superior Quality Tolerance	Special Quality Tolerance
28-20GA	1/2"	7/16"	-
19-16GA	5/8"	1/2"	-
15-12GA	3/4"	5/8"	-

H.R. & C.R. STEEL SHEET, PLATE & HOT DIPPED GALVANIZED SHEETS

Thickness Range	Commercial Quality Tolerance	Superior Quality Tolerance	Special Quality Tolerance
28-20GA	3/8"	5/16"	-
19-16GA	1/2"	7/16"	-
15-12GA	5/8"	1/2"	-
11GA-1/4"	5/8"	1/2"	-
5/16-3/8"	9/16"	15/32"	-
7/16"-1/2"	1/2"	7/16"	-
9/16"-3/4"	7/16"	11/32"	-
Heat Treated Steel Plate (Hardness Range 185-360 Brinell)			
To 14"	1- 5/16"	1- 5/32"	-
1/4" - 3/8"	1- 1/4"	1- 1/8"	-
7/16" - 1/2"	1- 1/4"	1- 1/8"	-
9/16" - 3/4"	1- 1/8"	1"	-
Stainless Steel and Other Heat Resistant Alloys Sheet & Plate			
30-20Ga	1/2"	7/16"	-
19-16GA	5/8"	1/2"	-
15-12GA	3/4"	5/8"	-
11GA-1/4"	3/4"	5/8"	-
5/16"- 3/8"	11/16"	9/16"	-
Aluminum & Copper			
.012" - .032"	5/16"	1/4"	-
.033" - .063"	7/16"	11/32"	-
.064" - .125"	9/16"	15/32"	-
.126" - .500"	5/8"	9/16"	-
.501" - .750"	11/16"	5/8"	-