

**Table 5603-1
MANNING'S ROUGHNESS COEFFICIENT**

Type of Channel	n
Closed Conduits	
Reinforced Concrete Pipe (RCPs).....	0.013
Reinforced Concrete Elliptical Pipe.....	0.013
Corrugated Metal Pipe (CMPs):	
2 2/3 x 1/2 in. Annular or Helical Corrugations unpaved - plain	0.024
2 2/3 x 1/2 in. Annular or Helical Corrugations paved invert	0.021
3 x 1 in. Annular or Helical Corrugations unpaved - plain	0.027
3 x 1 in. Annular or Helical Corrugations paved invert	0.023
6 x 2 in. Corrugations unpaved - plain	0.033
6 x 2 in. Corrugations paved invert	0.028
24" diameter and smaller with Helical Corrugations.*	0.020
3/4" x 3/4" x 7 1/2" <i>Spiral Rib</i>	0.013
HDPE	0.012
PVC	0.012
Ductile Iron Pipe	0.012
Vitrified Clay Pipe	0.013
Asbestos Cement Pipe.....	0.012
Open Channels (Lined)	
Gabions 0.025	
Concrete	
Trowel Finish	0.013
Float Finish.....	0.015
Unfinished	0.017
Concrete, bottom float finished, with sides of	
Dressed Stone.....	0.017
Random Stone	0.020
Cement Rubble Masonry.....	0.025
Dry Rubble or Riprap.....	0.030
Gravel bottom, side of	
Random Stone	0.023
Riprap.....	0.033
Grass (Sod).....	0.030
Riprap	0.035
Grouted Riprap.....	0.030
Open Channels (Unlined) Excavated or Dredged	
Earth, straight and uniform.....	0.027
Earth, winding and sluggish	0.035
Channels, not maintained, weeds & brush uncut.....	0.090
Natural Stream	
Clean stream, straight.....	0.030
Stream with pools, sluggish reaches, heavy underbrush	0.100
Flood Plains	
Grass, no brush.....	0.030
With some brush.....	0.090
Street Curbing.....	0.014

*Allowed only when the pipe length between structures is at least 20 pipe diameters.

RESOLUTION

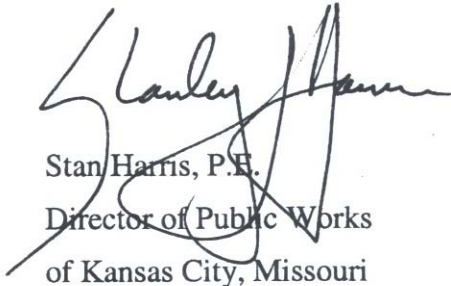
Be it resolved by the Director of Public Works of Kansas City, Missouri that the following listed Section of Division II, Construction and Materials Specifications, approved and adopted February 15, 2006 by the Kansas City Metropolitan Chapter of the American Public Works Association is approved and adopted as Official Standard Construction and Materials Specifications for the Department of Public Works of Kansas City, Missouri with like section and page numbers, except as modified by the October 2006 KCMO Supplement and hereby further modified by the attached supplement.

Section 5600 Storm Sewer Design

A copy of said specifications criteria and supplement are attached hereto and incorporated herein by reference.

The criteria shall become effective February 14, 2008 and shall modify all previously adopted supplements to this section.

Approved and adopted as Official Document No. CS080056
this 13th day of February, 2008.



Stan Harris, P.E.
Director of Public Works
of Kansas City, Missouri