



BUILDING CONSTRUCTION CODE CHANGE PROPOSAL
Amendment to 2024 International Plumbing Code (IPC)
Section 704.1

Submitted by: International Plumbing Code Committee

704.1 Slope of horizontal drainage piping.

Horizontal drainage piping shall be installed in uniform alignment at uniform slopes. The slope of a horizontal drainage pipe shall be not less than that indicated in Table 704.1 except that where the drainage piping is upstream of a grease interceptor, the slope of the piping shall be not less than 1/4 inch per foot (2-percent slope).

TABLE 704.1
SLOPE OF HORIZONTAL DRAINAGE PIPE

SIZE (inches)	MINIMUM SLOPE (inch per foot)
2½ or less	¼ ^a
3 to 6	⅓ ^a
8 or larger	⅙ ^a

For SI: 1 inch = 25.4 mm, 1 inch per foot = 83.33 mm/m.

a. Slopes for piping draining to a grease interceptor shall comply with Section 704.1.

Exception: The Authority Having Jurisdiction may approve a lesser slope for building sewers in lieu of a sewage ejector or pumping station when a registered engineer or architect certifies the building sewer design and its installation, and when the building owner agrees in writing under notary to accept the lesser slope. The minimum slope permitted shall be calculated from Manning’s Formula using a coefficient roughness of 0.013 and a sewage velocity of 2 feet per second. See chart below for calculated pipe slope and flow. (Arizona Administrative Code, R18-9-E301 Paragraph D, 2.e).

Manning's Formula Solution - Friction Factor = 013

Pipe Size (inches)	Slope (%)	Velocity (ft/s)	Full Flow Rate (cfs)	Full Flow Rate (GPM)	Full Flow Rate (GPD)	1/2 Full Flow Rate (GPM)
4	0.85	2.01	0.18	79	113,410	39
6	0.50	2.02	0.40	178	256,451	89
8	0.33	2.00	0.70	313	450,954	157
10	0.25	2.01	1.10	492	708,085	246
12	0.20	2.03	1.59	715	1,029,85	358
15	0.15	2.04	2.50	1,123	1,617,13	561
16	0.15	2.13	2.97	1,334	1,920,75	667

A low slope sewer certificate of compliance is required to be provided to the code official for designs and installations that utilize this exception.

Justification: This amendment adds the option of using a lesser slope for building sewers based on engineering calculations. The owner will be required to sign under notary that they have accepted the lesser slope. The registrant shall certify the design and final installation through special inspection.

Cost Impact: This amendment will reduce the costs associated with the previous approval process for low slope sewer installations.

Approved in previous 2018 Code Adoption process: **YES** **NO**

ACTION TAKEN:

2024 Code Committee Date: 01/15/2025
 Approved as submitted Modified and approved Denied No action taken

Development Advisory Board (DAB) Subcommittee Date: 02/13/2025
 Approved as submitted Modified and approved Denied No action taken

Development Advisory Board (DAB) Date:
 Approved as submitted Modified and approved Denied No action taken

Transportation, Infrastructure and Planning Subcommittee Date:
 Approved as submitted Modified and approved Denied No action taken

City Council Action Date:
 Approved as submitted Modified and approved Denied No action taken