

Pipe Materials &

MATERIAL TYPE

- Concrete

CONCRETE

- Aluminized Steel

- Corg. Steel (CSP)

- Structural Plate

- Polymeric-Coated

- Bituminous-Coated

STEEL

- Corg. Aluminum (CAP)

ALUMINUM

- Timber

- Other

OTHER

- Corg. Plastic (HDPE)

- PVC

- Perforated Plastic

- SRPE - Steel

Reinforced

Polyethylene

- PP - Polypropylene

PLASTIC

“**Liner**” materials
describe a lined pipe:

- Liner HDPE

- Liner PVC

- Liner Cured in Place

- Liner Metal

- Liner Other

LINER

Concrete Pipe

Material Type: Concrete



Corg. Steel (CSP)

(galvanized steel pipe)

Material Type: Steel

Corrugated
Steel



Structural Plate

Material Type: Steel



US 61 Silver
Bay r.p.
53.26

Galvanized steel plates are bolted together,
was used in larger diameter culverts



Polymeric-coated Steel

Material Type: Steel

thin black plastic
sheet inside and
outside of cmp

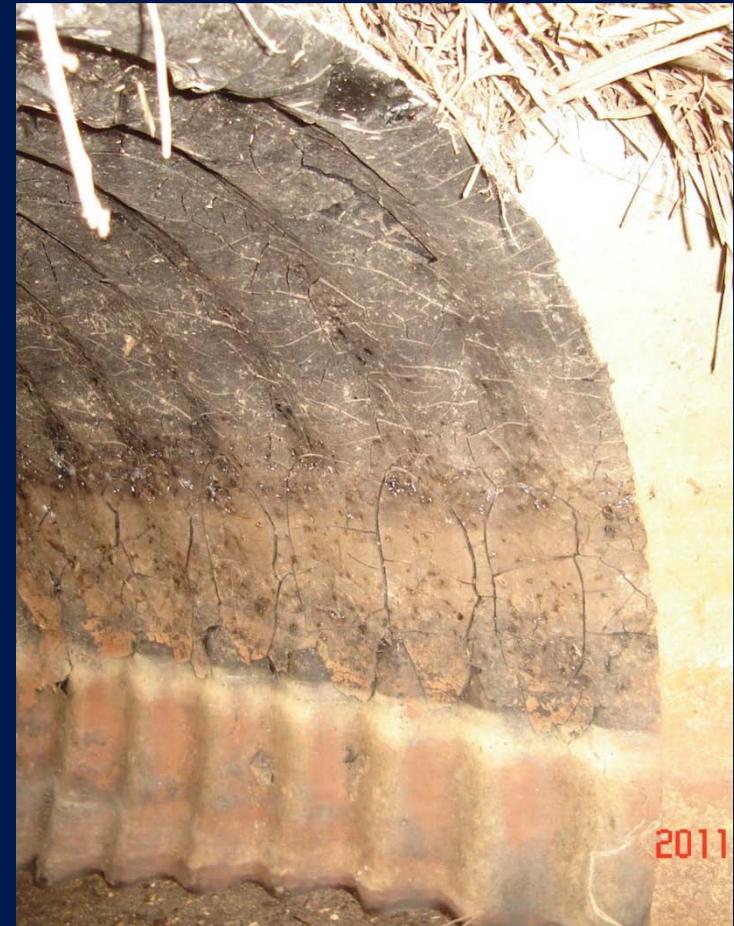


Bituminous-Coated Steel

Material Type: Steel



- Looks like tar on CMP, often flaking
- *May contain asbestos
- Labeled in Plans as “AB-Bonded”
- Not installed since 1970’s but still exists



Aluminized Steel

Material Type: Steel



Magnetic and has a sheen like the inside of a pop can but edges may be rusty

Photos at right by
Johnston-Fargo

Corg. Aluminum (CAP)

Material Type: Aluminum



Photo from <http://www.lockernz.co.nz/>

All aluminum pipe, not steel so no rust, not magnetic, is more bendable

PVC

Material Type: Plastic



Photo PVC pipe from <http://www.ipexinc.com/>

White or green, more brittle than HDPE, especially in cold

Corg. Plastic (HDPE)

Material Type: Plastic



HDPE = High Density Polyethylene has smooth inside and corrugated outside. HDPE is always black

Corg. Plastic (HDPE) Material Type: Plastic



Add a comment because single wall corrugated HDPE should not be used as highway culverts or storm drain.

SRPE - Steel-Reinforced PolyEthylene

Material Type: Plastic



Blue line shows it's SRPE

Exterior flanges are steel, coated with HDPE

[Photos of Durmaxx pipe by Contech](#)

Polypropylene

Material Type: Plastic



PP = Polypropylene Pipe is grey and stiffer than HDPE

Perforated Plastic

Material Type: Plastic

used in pond underdrains
to filter stormwater

Material Type: Other

- Vitreous Clay
- Timber
- Any other material



Wooden cattle pass
in D6 on MN 60
r.p. 185.91

Timber

Material Type: Other

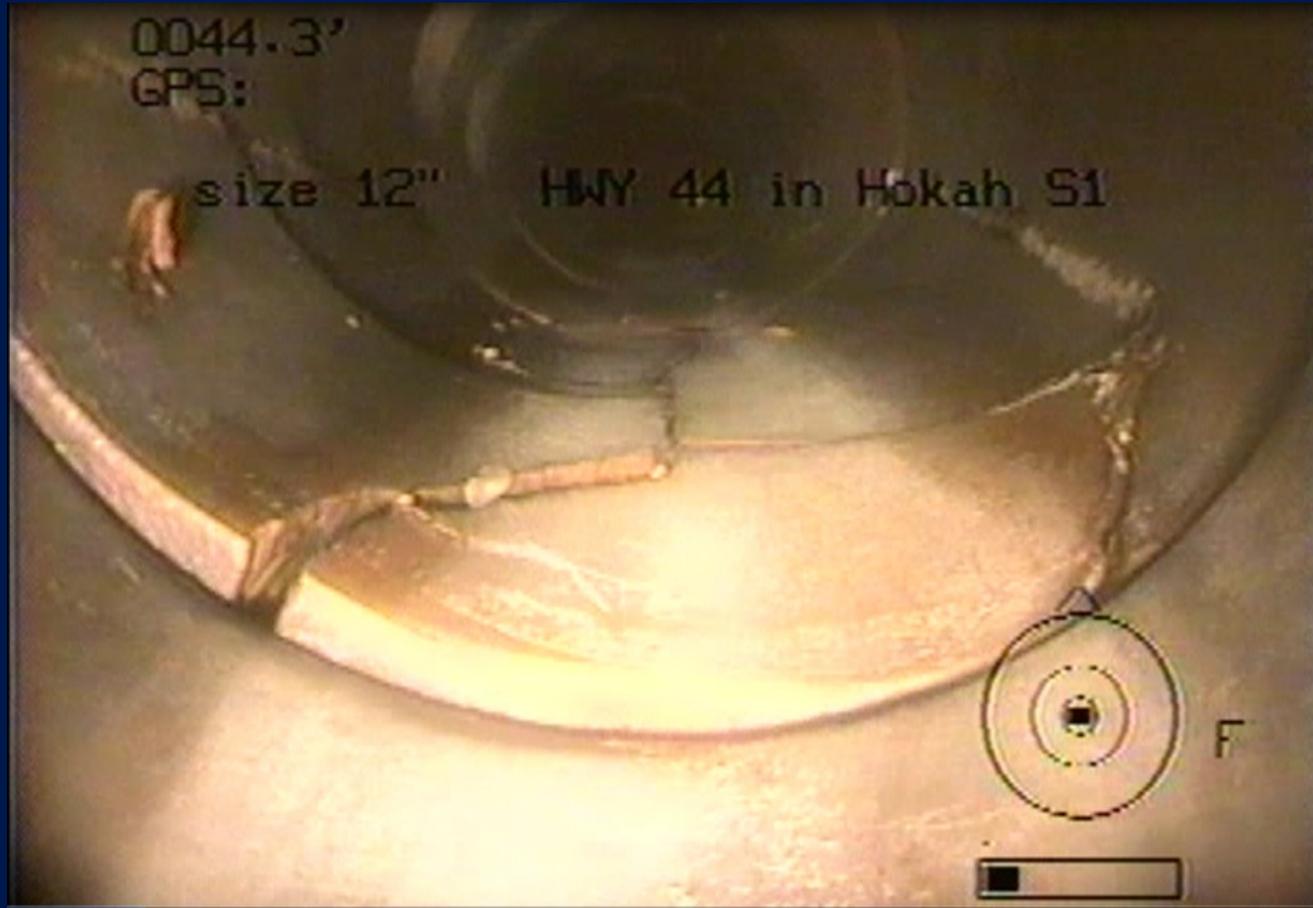
also used in wet box culverts

Wooden Pipe on Grand Ave,
MN 23 in Duluth



Vitrified Clay (VCP)

Material Type: Other



Red fired clay tile exists in some old small town storm drains and old farm drain tile.



Other Material

(add a comment to describe it)

Material Type: Other



From HIVE
Inspection



Excavated 20 inch box “pipe” carved from limestone provides outlet for old VCP storm drain -- D6 Hwy 56 Kenyon

Material Type: Liner

Liner

Materials:

- Liner HDPE
- Liner PVC
- Liner Cured in Place
- Liner Metal
- Liner Other
- Liner SRPE ??
- Liner PP ??

Liner HDPE

Material Type: Liner



Like Snap-Tite or butt-fused HDPE liner has grout between original pipe and liner.

Liner PVC

Material Type: Liner



Photo of PVC liner from Caltrans <http://www.dot.ca.gov/hq/oppd/dib/dib83.pdf>

Liner Cured in Place

Material Type: Liner



CIPP Liner is resin-filled fabric, inflated and cured with hot water or steam or UV light till it's rigid

Liner Metal

Material Type: Liner



Photo: Johnston-Fargo

Steel flat-seamed pipe is sometimes used as liner

Liner Other

Material Type: Liner

Use Comments to describe this.

For example, “Sprayed on concrete liner”