Chapter H
CATCH BASINS & INTERCEPTORS
Code References

1.) GENERAL
   a. Definitions:
      (1) Catch Basin Comm 81.01(52)
      (2) Interceptor Comm 81.01(136)
      (3) Grease interceptor Comm 81.20(113)
   b. Materials Comm 82.34(2) and Comm 84.30(2)
   c. Location Comm 82.34(3)(g) thru 2.
   d. Construction Comm 82.34(4)(a) to (5)

2.) GARAGE CATCH BASINS & INTERCEPTORS
   a. Catch basins required Comm 84.34(4)(a)1.
   b. Minimum size Comm 84.34(4)(a)2.b. & c.
   c. Outlet piping size & installation Comm 84.34(4)(a)2.d.
   d. Cleanout required Comm 82.35(3)(m)
   e. Waterline location Comm 82.34(4)(a)2.e.
   f. Minimum cover (grate) size (inlet) Comm 82.34(4)(a)2.f.
   g. Catch basins with solid covers Comm 82.34(4)(a)2.h.
   h. Floor drains and trench drains connecting to garage catch basins Comm 82.34(4)(a)g.3. thru 4.e.
   i. Grates for Garage Catch Basins, Floor Drains & Trench Drains Comm 82.34(4)(c)
   j. Drains for garages serving 1 & 2 family dwellings Comm 84.34(4)(b)1. thru 2.b.

3.) GREASE INTERCEPTORS
   a. Establishments requiring grease interceptors Comm 82.34(5)
   b. Type required
      (1) Public sewers Comm 82.34(5)(a)1.
      (2) POWTS Comm 82.34(5)(b)2. thru c.
   c. Grease interceptors for existing establishments Comm 82.34(5)(b)3.
   d. Fixtures flowing to exterior grease interceptors Comm 82.34(5)(b)
   e. Design of exterior grease interceptors Comm 82.34(5)(c)1.a. thru j.
   f. Capacity & sizing of exterior grease interceptors Comm 82.34(5)(c)2.
   g. Installation and location of exterior grease interceptors Comm 82.34(5)(c)3.a. thru e.
   h. Type of discharge to interior grease interceptors Comm 82.34(5)(c)3.a. thru e.
   i. Capacity & sizing of interior grease interceptors Comm 82.34(5)(d)1. thru 3.
   j. Flow controls Comm 82.34(5)(d)4. thru 5.
   k. Prohibited interior grease interceptor location & types Comm 82.34(5)(d)6.
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I. Grease or fat emulsifiers prohibited Comm 82.34(5)(e)

4.) (ACID) CHEMICAL WASTE PIPING SYSTEMS
a. Neutralizing basins required Comm 82.34(14) thru (14)(a)1.
b. Minimum size of neutralizing basins Table 82.34
c. Marble or limestone chips (Where required) Comm 82.34 (14)(a)3.
d. Inlet & outlet installation Comm 82.34(14)(a)4.
e. Vents for chemical waste systems Comm 82.34 (14)(b)
f. Vents for dilution & neutralizing basins Comm 82.34 (14)(b)1.,2. & 3.
g. Material for chemical drain & vent system Comm 84.30(2)(f)
h. Prohibited vent connections Comm 82.31(18)(b)

Note! 25' between Well and Exterior Grease Interceptor
Note! See page H 14 for sizing exterior grease interceptors
Basin & Frame & grate:
The dimensions shown for the frame & grate represent Neenah No. 2540A cast iron heavy duty frame & grate. The catch basin is fiberglass 36" x 48".

Note 1:
See Comm 82.35 (5) (a) 1. identifies a maximum distance of 18" from top of cleanout to the horizontal drain line permitting a "tee" fitting permitted as shown in the drawing above. If a distance greater than 18" is involved, the fitting selected must meet the prescribed radius conforming to Table 82.30-4.

Note 2:
48" dimension is recommended in this example not a plumbing code requirement.

Note 3:
This dimension is a minimum distance, it may be greater, see Comm 82.34 (4) (a) 2. c.

Note 4:
A catch basin with a minimum 4" inverted drain outlet is considered equivalent in dfu's to a 4" floor drain. The inverted drain outlet forms a trap and requires a minimum 1 1/4" vent.
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CATCH BASINS & INTERCEPTORS
Garage Catch Basin

using the fittings shown

4" CO

4" pipe

1 1/4" min. size vent required on outlet pipe

15" max. between cleanout & trap weir
see 82.34 (4)(a)2.d. recommended
see 82.34 (4)(a)2.c.

Neenah No. R2500 for heavy duty (5" HIGH)
Neenah No. R2510 for light duty (4" high)

36"x48" concrete catch basin with 6" concrete cover
and Neenah No. R2500 frame & grate

36" 82.34 (4)(a)2.b.

24" MIN.

24" Open grate

6" MIN.

6" MIN.

6' MIN.

8' MAX.

water level

trench drain 4" pipe

4" pipe

(4 DFU)

19 1/2" MIN.
Garage Catch Basin

15" max between trap weir and cleanout

Neenah No. 2540A
heavy duty frame & grate

24\(\frac{3}{4}\)" Open grate

36" max. between basin & trap weir
see 82.34 (4)(a)2.d.

8' max

48"

recommended see 82.34 (4)(a)2.c.

36"

82.34 (4)(a)2.b.

4" pipe

4" CO

16\(\frac{1}{2}\)" to 19\(\frac{1}{2}\)"

4" pipe (4 DFU)

water level

24" min

48"

28" TO 30"
CATCH BASINS & INTERCEPTORS
Garage Catch Basin

Neenah No. 2540A
heavy duty frame & grate

4" CO
Open grate

24¾"
6' MIN.
6' MAX.
32' MAX.
48"
4" pipe
4" P-trap and pipe. This could be 3" piping but measurements would change. see 82.34 (4)(a)
3. a. & b.
3" pipe
32' MAX.
36" max. between basin & trap weir see 82.34 (4)(a)2.d.

36" 82.34 (4)(a)2.b.

4" pipe (4 DFU)

4" pipe

1½" vent

36" max. between basin & trap weir see 82.34 (4)(a)2.d.

82.34 (4)(a)2.b.

28' TO 30'

MIN.
2' MIN.

MIN.
6' MIN.

82.34 (4)(a)2.a.

4" PIPE

Recommended see 82.34 (4)(a)2.c.

4" PIPE

with the fittings shown

4" CO

16½" to 19½"
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CATCH BASINS & INTERCEPTORS
Garage Catch Basin

15" max between trap weir and cleanout using the fittings shown 4" CO

36" max. between basin & trap weir See 82.34 (4)(a)2.d.

16½" to 19½"

4" pipe
(4 DFU)

24½" Open grate

24" TO 30"

24'-0" max

It may be greater see 82.34 (4)(a)2.c.

36"
82.34 (4)(a)2.b.

Neenah No. 2540A
heavy duty frame & grate

3" pipe

24'-0" max

recommended see 82.34 (4)(a)2.c.

State approved fiberglass catch basin required

floor drain (min. size for F.D. is 3")

36" 82.34 (4)(a)2.b.

Garage Catch Basin
15" max between trap weir and cleanout using the fittings shown 4" CO

Neenah No. 2540A
heavy duty frame & grate

36" max. between basin & trap weir See 82.34 (4)(a)2.d.

16½" to 19½"

4" pipe
(4 DFU)
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Garage Catch Basin

Neenah No. 2540a
heavy duty frame & grate

15" Max between trap weir and cleanout

4" pipe—(4 DFU)

4" 90° FTG ell

4" pipe—(4 DFU)

16½" to 19½"

4" CO

24¾"
Open grate

28" TO 30"

6" MIN.

6" MIN.

6" MIN.

2" MIN.

8" MAX.

Recommended see 82.34 (4)(a)2.c.

Fiberglass catch basin

Note!
When using the fiberglass basin & the frame, grate & fittings listed the measurements shown are accurate. Verification is always necessary due to changes made to products.

36" max. between basin & trap weir
See 82.34 (4)(a)2.d.

36" max. between basin & trap weir

36" max. between basin & trap weir

36" max. between basin & trap weir

36" max. between basin & trap weir

36" max. between basin & trap weir
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Comm 82.34 Floor Drain Discharging From Upper Floor

Thru roof or connecting to other vents

1 1/4" min for 40'

Floor drain at 1st floor level serving oil changing facility

3" @ 1/8"

36" x 48" Catch Basin
with 24" grate at basement level

Min. distance is
20 x ID of the pipe
see Comm. 82.34 (4)(a) 2.g.

1 1/4" min for 40' connecting
to 2" min vent terminal or
connecting to another vent
of required size.

3" CO

4" CO

4" from Toilet Room area

connect to municipal sanitary sewer

Min. distance is
20 x ID of the pipe
see Comm. 82.34 (4)(a) 2.g.

Open grate

water level

4" CO
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CATCH BASINS & INTERCEPTORS

Comm. 82.34 Garage Catch Basin receiving from a pressurized drain

- Pressure pump discharge into basin below water line
- Pressurized drain: maximum 2 fps velocity
- Open grate
- 4" CO
- 1 1/4" min vent for 40 feet
- Water level
- 6" min
- 6" min
- 12" min
- 4" pipe (4 DFU)
- External invert

The size of the grate inlet must be equal or greater than the capacity of the 4" outlet pipe of the catch basin.

Two options permitted:
- Left option with floor drain
- Option below with basin

- Explosion proof pump recommended
- Catch Basin in service bay
- Out thru roof or connect to other vent
- 1 1/2"
- 1 1/2"
- 1 1/2"
- 1 1/2" min.

36" x 48" Catch Basin in oil changing/service pit

- Explosion proof pump recommended
- 4" CO
- 4"

Catch Basin in service bay

5' deep approx.

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Chapter H
CATCH BASINS & INTERCEPTORS
Catch Basins and Floor Drains for Residential Garages (one and two family dwellings)
(Comm. 82.34 (4)(b))

The size of the grate inlet must be equal to or greater than the capacity of the outlet (4" dia) of the catch basin

Comm 84.30 (2) (g)
Approved materials include:
Concrete, cast iron, coated 12-gauge steel or fiberglass

Residential Garage Catch Basin
The minimum capacity of the interceptor shall be based on the maximum flow rate of water through the interceptor in gallons per minute. Water consumption for the car wash equipment in this situation is based on 30 gpm (max. flow rate).

\[15 \times 30 \text{ GPM (flow rate)} = 450 \text{ GPM (minimum capacity)}\]
\[5 \times 30 \text{ GPM} = 150 \text{ GPM (5 x max. flow rate)}\]

Based on Comm. 82.34 (6)(a) 1. 2. and (b) 1. 2. the calculations show that a 30 gpm car wash will require a 600 gallon interceptor measuring below the outlet invert.

**CAR WASH GARAGE CATCH BASIN**
Comm. 82.34 (6)(c)

The waste of one hand-held washing wand may discharge to a garage catch basin. If two (2) hand held washing wands are being used then an additional catch basin shall be installed.
GARAGES

Chapter H
CATCH BASINS & INTERCEPTORS
Questions & Answers

1. **Question:** Does a garage catch basin have to be installed in a private garage serving a one or two family dwelling if a drain is desired in the garage?
   **Answer:** No. Comm. Allows the use of a floor drain with a solid bottom sediment basket. It also allows an 18" diameter catch basin. Note! Floor drains in private garages are not allowed in some municipalities.

2. **Question:** What is the maximum length of a trench drain?
   **Answer:** There is no maximum length for a trench drain. The method for cleaning shall be taken into account when designing the trench drain.

3. **Question:** Where does a cleanout have to be installed for the drain from a garage catch basin?
   **Answer:** It must be connected to the horizontal drain within 15" from the wall of the catch basin. See Comm 82.35 (3) (m).

4. **Question:** Is a catch basin considered a fixture and if so does it need to be vented?
   **Answer:** Yes, a catch basin is considered a fixture the same as a floor drain would be and a 4" floor drain required a 1-1/2" individual vent. However, a situation may occur where the basin may be vented through a combination drain and vent system, circuit vent or a wet vent.

5. **Question:** How many floor drains may be connected individually to a garage catch basin?
   **Answer:** There is not any limit but physical space along the basin wall will limit the number of drain entries. Each floor drain must connect individually to the catch basin.

6. **Question:** What type of a garage catch basins required for an auto repair garage which is connected to a septic system?
   **Answer:** The catch basins are the same as for any auto repair garage but the waste from the catch basin shall discharge into a holding tank which must be approved by the DNR. The waste shall not discharge to a POWTS. (I.E. septic system).

7. **Question:** What is the drainage fixture unit (DFU) of a garage catch basin?
   **Answer:** The garage catch basin has a DFU value of 4.

CHEMICAL WASTE PIPING SYSTEMS

1. **Question:** What type of piping is permissible for chemical waste and vent lines?
   **Answer:** There are several manufacturers available. Some are: Chem Drain (Spears Plastics), Orin, Enfield & Zurn.
2. **Question:** Shall the chemical dilutions or neutralizing basins have a submerged inlet or outlet?

**Answer:** It may be constructed in either manner. See pages in this section for installation details.

3. **Question:** May a vent serving chemical drain piping connect to a sanitary vent pipe?

**Answer:** No, chemical vent piping shall be kept completely separate from the sanitary venting system and vent separately through the roof or tie into other acid waste vents which are vented through the roof.

### GREASE INTERCEPTOR (EXTERIOR)

1. **Question:** How is an exterior grease interceptor sized?

**Answer:** See Comm. 82.34 (5)(b) 2. and below.

2. **Question:** Where shall the exterior interceptor be located?

**Answer:** The grease interceptor shall be placed a minimum of 5’ from the outside wall of the building. Cleaning access shall be provided for the interceptor. See Comm. 82.34 (5)(b) 3. a.

#### Sizing Exterior Grease Interceptor:

**Restaurants:**

**Note:** Minimum size exterior grease interceptor is 750 gallons if discharging to public sewer system & minimum 1000 gallons if discharging to a POWTS.

**Example:**
A restaurant with 100 seats (no drive-in service or drive-up service window); open for service from 6:00 am to 2:00 pm (breakfast & lunch), and the kitchen area is provided with a dishwasher & food waste disposal. The facility discharges to a POWTS.

Comm 82.34 (5) (b) 2. Formula: \( C = S \times H \times A \)

- **C** = capacity of greaser interceptor
- **S** = number of seats
- **H** = hours open (minimum 6 hours; maximum 12 hours)
- **A** = appliance factor

For this example:
\[
C = S(100 \text{ seats}) \times H(8 \text{ hours open}) \times A(1.25 \text{ appliance factor})
\]

\[
C = 100 \times 8 \times 1.25
\]

\[
C = 1000 \text{ gallon minimum capacity grease interceptor}
\]

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Dining halls, nursing homes, school kitchens or for carry out or delivery services:

Note: Minimum size exterior grease interceptor is 750 gallons if discharging to public sewer system & minimum 1000 gallons if discharging to a POWTS.

Example:
A nursing home serving 150 patients 3 meals per day, 2-hours per meal period. The facility discharges to a municipal sewer system.

Comm 82.34 (5) (a) 2. Formula: \[ C = \frac{M \times G \times H}{2 \times P} \]

C = capacity of greaser interceptor
M = meals served per day (includes all meals served for all meal periods)
G = 3 gallons per meal (G is always 3 in the formula)
H = appliance factor
P = number of meal periods

For this example:

\[ C = \frac{(3 \times 150) \times 3 \times 6 \text{ hours}}{2 \times 3} \]

\[ C = \frac{8100}{6} \]

\[ C = 1350 \]