STORAGE SPRINKLER DESIGN CHECKLIST

NFPA 13 STORAGE PROTECTION / BASIS OF DESIGN WORKSHEET
COMMODITY, ARRANGEMENT, HEIGHT & PROTECTION CRITERIA
(NFPA 13 – Chapters 20 through 26)

3D FIRE DESIGN, LLC
20 Siesta Circle, Heath, Texas 75032 | 972-213-3210
gerald@3dfiredesign.com | joshua@3dfiredesign.com
www.3dfiredesign.com

Note: This checklist captures the storage information required to select a protection scheme under NFPA 13. Complete all applicable items and return with the owner's information certificate. Incomplete storage data may delay design or require conservative assumptions.

Project Name: _____ **Project #:** _____

Building / Area: _____ **Date:** _____

NFPA 13 Edition: ☐ 2019 ☐ 2022 ☐ 2025 Other: _____ **Prepared By:** _____

1. COMMODITY CLASSIFICATION *NFPA 13 §20.4*

☐ Class I ☐ Class II ☐ Class III ☐ Class IV

☐ Group A plastic ☐ Group B plastic ☐ Group C plastic ☐ Rubber tires

If Group A: ☐ Cartoned ☐ Exposed ☐ Expanded ☐ Unexpanded

Encapsulated: ☐ Yes ☐ No **Commodity description:** _____

2. PALLET TYPE *NFPA 13 §20.3.2*

☐ Wood pallet (no class modification) ☐ Unreinforced plastic pallet (one class modification)

☐ Reinforced plastic pallet (two class modification) ☐ No pallets / not applicable

3. STORAGE ARRANGEMENT *NFPA 13 §20.5*

☐ Rack ☐ Shelf storage ☐ Back-to-back shelf

☐ Solid pile ☐ Palletized ☐ Bin box

For Rack Storage:

Rack type: ☐ Single-row rack ☐ Double-row rack ☐ Multiple-row rack

Shelf type: ☐ Open rack ☐ Solid shelving ☐ Slatted shelf rack ☐ Solid shelf rack

Flue spaces maintained: ☐ Yes ☐ No Aisle width (ft): _____ Rack depth (ft): _____

Storage arrangement description: _____

4. CEILING & STORAGE HEIGHTS *NFPA 13 §20.6*

Ceiling height (§20.6.2): _____ **Roof / ceiling slope:** _____

Storage height:

☐ From floor (§20.6.3): _____ ft

☐ Clearance to sprinkler, minimum (§9.5.6): _____ ft

☐ Clearance to ceiling (§20.6.4): _____ ft

3D FIRE DESIGN, LLC
20 Siesta Circle, Heath, Texas 75032 | 972-213-3210
gerald@3dfiredesign.com | joshua@3dfiredesign.com
www.3dfiredesign.com

5. MISCELLANEOUS STORAGE

NFPA 13 §3.3.124

Does storage qualify as miscellaneous storage? ☐ Yes ☐ No

All of the following must be satisfied to qualify:

- ☐ Maximum storage height 12 ft (3.7 m)
- ☐ Incidental to the occupancy
- ☐ Maximum 10 percent of sprinklered area or 4000 ft^2 (372 m^2), whichever is greater
- ☐ Maximum 1000 ft^2 (93 m^2) pile
- ☐ Minimum 25 ft (7.6 m) separation between piles

6. OTHER CONSIDERATIONS AFFECTING DESIGN OPTIONS

☐ Smoke vents ☐ Draft curtains ☐ HVLS fans ☐ Slope exceeding 2:12

☐ Excessive clearances ☐ Open-top containers ☐ Idle pallet storage ☐ In-rack sprinklers

☐ Flammable / combustible liquids ☐ Aerosols ☐ High-piled storage permit (IFC)

Notes: _____

_____

7. PROPOSED PROTECTION CRITERIA

3D Fire Design use

Sprinkler type: ☐ CMDA ☐ CMSA ☐ ESFR ☐ In-rack

System type: ☐ Wet ☐ Dry ☐ Preaction

K-factor: _____ **Temperature rating (°F):** _____

Orientation: _____ **Response:** _____

Density (gpm/ft^2): _____ **Design area (ft^2):** _____

No. of design sprinklers: _____ **Min. operating pressure (psi):** _____

Hose stream allowance (gpm): _____ **Duration (min):** _____

Governing NFPA 13 table / figure: _____

INFORMATION PROVIDED BY

Name: _____ **Company:** _____

Signature: _____ **Date:** _____

Section references follow NFPA 13 (2019 Edition) numbering; confirm against the edition adopted by the Authority Having Jurisdiction.
Final protection criteria are determined by 3D Fire Design, LLC upon review of complete storage, building and water supply information.