

## 430 COLD STORAGE

Cold storage is planned to provide refrigerated warehouses for storage of General Supply Materials which require temperatures ranging from -10°F to 60°F in the following categories:

- Perishable Substances
- Photosensitized Material
- General Supply Batteries
- Medical and Dental Supplies

Excluded from this category group are cold storage for weapons-related batteries (use category code 424 10) and cold storage spaces which are a functional part of another facility such as an open mess, club, hospital, commissary or exchange. These cold storage spaces are planned as part of the main facility and have to be accommodated within its space allowances.

Storage of Farinaceous and High Acid Food Products. These food products are properly stored in an environment where the temperature is between 50 and 70 degrees fahrenheit. A cold storage warehouse will be required to provide chill storage at those activities where climatic conditions preclude the use of a general purpose warehouse. However, formal written approval must be obtained by the activity from COMNAVSUPSYSCOM, Code 0621, Navy Warehouse Utilization Program Manager, prior to establishing a deficiency and requirement for chill storage in lieu of general purpose storage. This request/approval procedure will permit revising the SFMN to reflect this requirement and provide the required justification.

### 431 10 COLD STORAGE WAREHOUSE (SF)

A cold storage warehouse is planned to preserve the quality of perishable foods and general supply materials that require refrigeration. The warehouse will include freeze and chill space and normal processing facilities and mechanical areas.

The space requirements are applicable to cold storage facilities of all sizes whether built as separate structures or in conjunction with other buildings and are determined by using the criteria furnished in Section 440B in conjunction with Tables 431-10A and 431-10B. The facility requirements are based upon the cubic foot space required per man per 30 days. This method utilizes subsistence consumption requirements for shore facilities and provides for two types of storage requirements. However, prior to using the criteria in Section 440B, it is highly recommended that the readers familiarize themselves with the "Storage and Warehouse Planning Guidelines" on page 440-3, which provides an introduction and outline to the supply criteria.

For additional information, see DM 32.2, "Covered Storage" and NAVFAC P-272, drawings 11404208 thru 1404214 and for Marine Corps Fleet Stock Account requirements, see NAVFAC P-272, Part 4, Definitive Designs.

TABLE 431-10A

TCF ALLOWANCES FOR REFRIGERATED WAREHOUSE FACILITIES PER MAN PER MONTH

Total Cu. Ft. (TCF) Allowances for Category Code 431-10

Type I Requirement: Allows 4 cubic feet (CF) of perishable subsistence per man per month when fresh milk and bread are received monthly.

Type II Requirement: Allows 3 CF of perishable subsistence per man per month when fresh milk and bread are received at least every other day.

<u>TYPE</u>	<u>NET CUBIC</u>	<u>UNIVERSAL</u>	<u>TCF ALLOWANCES PER MAN PER MONTH*</u>		
	<u>FEET PER MAN</u>		<u>FACTOR**</u>	<u>TOTAL</u>	<u>CHILL</u>
	<u>PER MONTH</u>				
I	4	1.96	7.84	4.12	3.72
II	3	1.96	5.88	4.12	1.76

\* All allowances represent average values. If historical data are available that differ from these allowances, such data may be used for requirements planning if fully justified/documented.

\*\* See derivation of "Universal Factor" in Section 440A. This factor states that "1.96 TCF are required per cubic foot of material to be stored or 78.4 TCF are required per M/T of material to be stored". This ratio (1.96 to 1) applies equally to bin, rack and bulk storage areas.

TABLE 431-10B

SF PER NS MULTIPLIERS FOR TRADITIONAL LOW-RISE REFRIGERATED FACILITIES\*

Total Sq. Ft. (SF) Multipliers Applicable to Net Sq. Ft. (NS)  
 Allowances for Category Code 431-10

<u>M/T of Material to be Stored</u>	<u>Allowable TCF Requirements**</u>	<u>SF Per NS Multiplier*</u>
up to 75	Up to 5880	3.0
" " 100	" " 7840	2.63
" " 200	" " 15,680	2.3
" " 300	" " 23,520	2.22
" " 400	" " 31,360	2.20
" " 1,000	" " 78,400	2.18
" " 5,000	" " 392,000	2.04
" " 10,000	" " 784,000	1.94
" " 15,000	" " 1,176,000	1.84
Over 15,000	Over 1,176,000	1.80

\* SF per NS Multipliers are average historical values based on traditional low-rise warehouses with wide aisles for counterbalanced forklift truck operations. For existing activities, these values are furnished to assist the planner in evaluating actual SF/NS Multipliers. Such actual values for activities reporting on the SFMR are determined and printed by ADP on Line 21a of the SFMR. Line 21b of the SFMR exhibits Average SF/NS Multipliers for the "Type of Activity Group" of which the reporting/planning activity is a part. The SF/NS Multipliers in this table and those appearing on Lines 21a and 21b of the SFMR are to be used in developing BFR documentation for traditional low-rise facilities. If new construction of high-rise, state-of-the-art facilities is planned, guidance in Section 440C applies.

\*\* See Section 440A for Derivation of "Universal Factor." This factor states that "1.96 TCF are allowed per cubic foot of material to be stored or 78.4 TCF are allowed per M/T of material to be stored." This ratio (1.96 to 1) applies equally to bin, rack and bulk storage areas.