# FIRE & RESCUE



## ISO Fire Flow Worksheet

**Needed Fire Flow Work Sheet (ISO formulas)**

NFF = (Ci)(Oi)(Xi+Pi)
C=18F(Ai)^0.5

| | | | |
|---|---|---|---|
| Address: | | | |
| Project Name: | **CK Maricamp** | Occupancy Type: | **Retail** |
| Construction Type: | | Number of Stories: | **1** |

**STEP 1** Take the area, which is 100% sq. ft. of the first floor plus the following percentage of the total area of the other floors.

| | | |
|---|---|---|
| **First Floor Area in Sq. Ft** | 7885 | Sq. Ft. @ 100% |
| **Additional Floors** | | |
| Enter total area in sq. ft for all other floors | 0 | |
| **Total Area Entire Building** | 7885 | |

**STEP 2**

F = Coefficient related to the class of construction as determined by using the construction type found in SBCCI

| Construction Type | Class | F Value |
|---|---|---|
| Frame | 1 | 1.5 |
| Joist Masonry | 2 | 1 |
| Non-combustible | 3 | 0.8 |
| Heavy Timber | 4 | 0.8 |
| Modified fire resistance | 5 | 0.6 |
| Fire resistive | 6 | 0.6 |

| | | |
|---|---|---|
| **Construction Class** | 2 | |
| **Square Root of the Area x F x 18** | 1500 | = C Value |

## ISO Fire Flow Worksheet

**Needed Fire Flow Work Sheet (ISO formulas)**

| | | |
|---|---|---|
| **STEP 3** | Multiply result of rounded off GPM by the Occupancy Factor (Oi) | **Occupancy Factor** |
| | **Noncombustible (C-1)** = No active fuel loads such as storage of asbestos, clay, glass, marble, stone, or metal products. | **0.75** |
| | **Limited - Combustible (C-2)** = Limited fuel loads such as airports, apartments, art studios, auto repair, auto showroom, aviaries, banks, barber shops, beauty shops, churches, clubs, cold storage warehouses, day care center, educational occupancies, gas stations, green houses, health clubs, hospitals, jails, libraries, medical labs, motels, museums, nursing homes, offices, radio stations, recreation centers, and rooming houses. | **0.85** |
| | **Combustible (C-3)** = Moderate fuel loads such as auto part stores, auto repair training center, bakery, bookstores, bowling centers, casinos, commercial laundries, contractor equipment storage, dry cleaners with no flammable fluids, leather processing, municipal storage buildings, nursery sales stores, pavilions, pet shops, photographic supplies, printers, restaurants, shoe repair, supermarkets, theaters, vacant buildings, and most wholesale & retail sales ocuppancies. | **1.0** |
| | **Free-Burning (C-4)** = Active fuel loads such as aircraft hangers, cabinet making, combustible metals, dry cleaners using flammable fluids, feed stores, furniture stores, kennels, lumber, packaging and crating, paper products manufacturing, petroleum bulk distribution centers, tire manufacturers, tire recapping or retreading, wax products, and wood working shops. | **1.15** |
| | **Rapid-Burning (C-5)** = Contents that burn with great intensity, spontaneously ignite, have flammable or explosive vapors, or large quantities of dust such as ammunition, feed mills, fireworks, flammable compressed gases, flammable liquids, flour mills, highly flammable solids, matches, mattress factories, nitrocellulose-based products, rag storage, upholstery shops, & waste paper storage. | **1.25** |
| | **Occupancy Class Selected (1 thru 5)** 2 | |
| | **GPM x Oi** 1275 | |

# ISO Fire Flow Worksheet

**Needed Fire Flow Work Sheet (ISO formulas)**

**STEP 4** Now consider the exposure factor (Xi) - (Separation between buildings)

| Distance (feet to the exposed building) | Xi | >3 stories |
|---|---|---|
| 0-10 | 0.22 | 0.47 |
| 11-30 | 0.18 | 0.43 |
| 31-60 | 0.13 | 0.38 |
| 61-100 | 0.09 | 0.34 |

| | |
|---|---|
| **Distance, in feet, to the exposed building** | 57 |
| **Xi (from table)** | 0.13 |
| **Multiply GPM from step 4 by (1+Xi)** | |
| Total From Step 4 | 1441 |

**STEP 5** **Approved Fire Sprinkler System? (Y or N)** N

Take fire flow from step 5 and multiply by sprinkler credit of 0.25

**Sprinkler credit** 0

Now subtract sprinkler credit from fire flow in step 4

| | |
|---|---|
| **NEEDED FIRE FLOW** | **1500 GPM** |

GREATER NAPLES FIRE RESCUE DISTRICT
FIRE AND LIFE SAFETY
2700 N Horseshoe Dr. • Naples, FL 34104
Phone: (239)774-2800 Fax: (239)774-3116

# Hydrant Flow Test

Date: 6-8-17 Time: 11:15AM Tested By: JC KK

Location: 3608 Tamiami Trail E - O'Reilly's Auto Parts

Requested By: Jorge Hernandez - AVID Group Date: 5/30/2017

Comments: Jorge's ph. 727-647-0356 jorge.hernandez@avidgroup.com

## Hydrant Flow Discharge

Static Pressure: 53 Residual Pressure: 33

| | | |
|---|---|---|
| Port Size: 4½ | Flow PSI: 13 | GPM: 1194 |
| Port Size: | Flow PSI: | GPM: |
| Port Size: | Flow PSI: | GPM: |

Total Flow: 1194

Fire Flow @ 20 PSI Residual: 1564

Inspector Comments:

Steven A. Kelley
Fire Official's Signature

Inspection Fee: $150-

Paid By: ☐Credit Card ☑Check Check #: 2924 Date Received: 5/30/17

*Professionalism ~ Integrity ~ Compassion*