

# INDOOR SWIMMING POOL MOISTURE LOAD CALCULATION

**TABLE 1**  
INDOOR POOL ROOM 50% RELATIVE HUMIDITY EVAPORATION FACTOR (LB/HR - SQ/FT)

| AIR TEMPERATURE | P O O L W A T E R T E M P E R A T U R E |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-----------------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
|                 | 78                                      | 80   | 82   | 84   | 86   | 88   | 90   | 92   | 94   | 96   | 98   | 100  | 102  | 104  |
| 87              | .016                                    | .020 | .023 | .027 | .030 | .035 | .039 | .044 | .048 | .054 | .059 | .065 | .071 | .077 |
| 86              | .017                                    | .021 | .024 | .028 | .031 | .036 | .040 | .045 | .049 | .055 | .060 | .066 | .072 | .078 |
| 85              | .018                                    | .022 | .025 | .029 | .033 | .037 | .041 | .046 | .051 | .056 | .061 | .067 | .073 | .079 |
| 84              | .019                                    | .023 | .026 | .030 | .034 | .038 | .042 | .047 | .052 | .057 | .062 | .068 | .074 | .080 |
| 83              | .019                                    | .023 | .026 | .030 | .034 | .038 | .042 | .047 | .052 | .057 | .062 | .068 | .074 | .080 |
| 82              | .020                                    | .024 | .027 | .031 | .035 | .039 | .043 | .048 | .053 | .058 | .063 | .069 | .075 | .081 |
| 81              | .021                                    | .025 | .028 | .032 | .036 | .040 | .044 | .049 | .054 | .059 | .064 | .070 | .076 | .082 |
| 80              | .022                                    | .025 | .029 | .033 | .037 | .041 | .045 | .050 | .054 | .060 | .065 | .071 | .077 | .083 |
| 79              | .023                                    | .026 | .030 | .034 | .038 | .042 | .046 | .050 | .055 | .060 | .066 | .072 | .078 | .084 |
| 78              | .024                                    | .027 | .031 | .035 | .038 | .043 | .047 | .051 | .056 | .061 | .067 | .073 | .079 | .085 |
| 77              | .025                                    | .028 | .032 | .035 | .039 | .043 | .048 | .052 | .057 | .062 | .068 | .074 | .079 | .086 |
| 76              | .026                                    | .029 | .033 | .036 | .040 | .044 | .049 | .053 | .058 | .063 | .069 | .074 | .080 | .087 |
| 75              | .027                                    | .030 | .034 | .037 | .041 | .045 | .050 | .054 | .059 | .064 | .070 | .075 | .081 | .088 |

## SWIMMING POOL ACTIVITY FACTOR SELECTION

**RESIDENTIAL PRIVATE POOL .....1.0**

Most popular water temperatures between 84° - 86° F. Room air temperature usually 2° degrees above water temperature. For exercise or lap pools water temperature between 76° - 80° F.

**HOTEL -HEALTH CLUBS - CONDOMINIUMS .....1.3**

Water temperatures normally between 80° - 84° F. Room air temperature varies (ideally, 2 degrees above water temp.)

**HOT TUBS - SPAS - WHIRLPOOLS .....2.0**

Water up to 104° F. Room Air up to 88° F.

**SCHOOLS - YMCA'S .....1.5**

**PUBLIC POOLS - AQUATIC CENTERS .....2.0**

Competitive swimming 78° - 80° F.  
Pleasure swimming 82° - 84° F.  
Therapeutic and children 86° - 95° F.  
Room air temperature 2° above water to 88° F. Maximum

## SWIMMING POOL ACTIVITY FACTOR SELECTION

**Moisture Evaporation (Lb./Hr.) = Pool Surface Area x Activity Factor x Evaporation Rate Factor**

*P.S.A. = Pool Surface Area (sq./ft.)    A.F. = Activity Factor (per chart)    E.R.F. = Evaporation Rate Factor (from table one)*

Note: The above factors will allow dehumidifiers to control humidity to 50% during in-active hours and up to 60% during active hours

# INDOOR SWIMMING POOL MOISTURE LOAD CALCULATION

**TABLE 2**  
**INDOOR POOL ROOM 60% RELATIVE HUMIDITY EVAPORATION FACTOR (LB/HR - SQ/FT)**

| AIR<br>TEMPERATURE | P O O L W A T E R T E M P E R A T U R E |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------|---|------|------|------|------|------|------|------|------|------|------|------|------|------|
|                    | 78                                      | 80   | 82   | 84   | 86   | 88   | 90   | 92   | 94   | 96   | 98   | 100  | 102  | 104  |
| 87                 | .009                                    | .012 | .016 | .019 | .022 | .028 | .032 | .036 | .041 | .046 | .052 | .058 | .064 | .070 |
| 86                 | .010                                    | .013 | .017 | .020 | .024 | .029 | .033 | .037 | .042 | .047 | .053 | .059 | .065 | .071 |
| 85                 | .011                                    | .015 | .018 | .022 | .026 | .030 | .034 | .039 | .044 | .049 | .054 | .060 | .066 | .072 |
| 84                 | .013                                    | .016 | .019 | .023 | .027 | .031 | .035 | .040 | .045 | .050 | .056 | .061 | .067 | .073 |
| 83                 | .014                                    | .017 | .021 | .024 | .028 | .032 | .037 | .041 | .046 | .051 | .057 | .062 | .068 | .075 |
| 82                 | .015                                    | .018 | .022 | .025 | .030 | .033 | .038 | .042 | .047 | .052 | .058 | .064 | .070 | .076 |
| 81                 | .016                                    | .019 | .023 | .027 | .030 | .035 | .039 | .044 | .048 | .053 | .059 | .065 | .071 | .077 |
| 80                 | .017                                    | .020 | .024 | .028 | .032 | .036 | .040 | .045 | .049 | .055 | .060 | .066 | .072 | .078 |
| 79                 | .018                                    | .022 | .025 | .029 | .033 | .037 | .041 | .046 | .050 | .056 | .061 | .067 | .073 | .079 |
| 78                 | .019                                    | .023 | .026 | .030 | .034 | .038 | .042 | .047 | .052 | .057 | .062 | .068 | .074 | .080 |
| 77                 | .020                                    | .024 | .027 | .031 | .035 | .039 | .043 | .048 | .053 | .058 | .063 | .069 | .075 | .081 |
| 76                 | .021                                    | .025 | .028 | .032 | .036 | .040 | .044 | .049 | .054 | .059 | .064 | .070 | .076 | .082 |
| 75                 | .022                                    | .026 | .029 | .033 | .037 | .041 | .045 | .050 | .055 | .060 | .065 | .071 | .077 | .083 |

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Water up to 104° F.  
Room Air up to 88° F.

### SCHOOLS - YMCA'S .....1.5

### PUBLIC POOLS - AQUATIC CENTERS ..... 2.0

Competitive swimming 78° - 80° F.  
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