Dynamic safety stock calculation

Dynamic Safety stock:

The dynamic safety stock is calculated in the planning run of the order proposal quantity. In the MRP evaluation, MD04 - you can check the parameters used to calculate the dynamic safety stock in the period totals display. To set the dynamic safety stock, the master data settings required are:

1. Maintain MRP view.
2. In MRP 2 view enter the coverage profile which in configuration will carry the elements required as detailed below.
3. Material master - you have MRP type PD. It is maintained in SPRO under the node ->

SPRO - Production - Material Requirements Planning - Planning - MRP Calculation - Define Range of Coverage Profile (Dynamic Safety Stock).

It is maintained with respect to a plant as the calculation is plant specific. Calculation -

The dynamic safety stock is calculated using the following formula: average daily requirements * range of coverage.

The individual parameters are described below:

**Average daily requirements**

The calculation of the average daily requirements is carried out using the following formula: requirements in the specified periods/number of days in the total period length. You must maintain the following parameters for the calculation of the average daily requirements:

1. **Period indicator**
   You use this indicator to determine the calendar period for which you want to carry out the average daily requirements. Here you can enter the following:
   - weeks (W)
   - months (M)
   - periods according to the planned calendar (K)

2. **Type of period length** - You use this indicator to determine the length of the individual periods in detail. Here you can enter the following:
   - workdays
   - calendar days
   - standard days - if you select standard days as a period length, you must determine the number of days per period in the field, "No. standard days".
     
     If you set standard days as the period length, you must enter the number of days per period in the "NO. standard days" field.

3. **Number of periods**
   Here, you define the number of periods you use to calculate the average daily requirements.

**Determining the range of coverage**

You can determine the range of coverage for a maximum of three periods and you can maintain different coverage for each period. To do this, you must define the ranges of coverage and the periods in the screen section entitled, "Determine range of coverage".

You also have the option of limiting the range of coverage in each of the three periods by entering a minimum and a maximum range of coverage. The system checks whether the actual range of coverage (available quantity / average daily requirements) lies below the minimum range of coverage or above the maximum range of coverage. If this is the case, the dynamic safety stock level is recalculated using the information for the target range of coverage.

**Example - 1**

Coverage profile - 001, with following settings assign in material master - MRP2 view, Period type = M

No of period = 2

Type of length = 3 and days/period = 20.

Range of coverage for first period (target) = 3, no of periods = 2

Let us say requirements areas below -

12.11.2007 - 1000
19.11.2007 - 2000

No of days = 2 * 20 = 40

average Daily requirement = (1000 + 2000) / 40 = 3000 / 40 = 750

Safety stock requirement = 750 * 3 (target) = 225. Run MRP, result is as below

12.11.2007 - pl order qty - 1225 available qty - 1225
12.11.2007 - VSF 1000 - available qty - 225
19.11.2007 - pl order qty - 2000 balance - 2225
Example - 2
Coverage profile - 002, with following settings, assign in material master - MRP2 view
Period = M
No of period = 1
Type period= 1 i.e. working days as per factory calendar, please check your factory calendar. It is taking form no of days of factory calendar, remove the days which already passed, then remove holidays.
Example - In factory calendar -
2,3,9,10,16,17,23,24,30 are holiday i.e 9 days in 30 days are holidays,
First, today is let us say 8th, hence from 30 days remove 7 days. (as it is already passed), hence left with 23 days.
Holidays applicable are, 9,10,16,17,23,24,30 i.e. 7 days i.e. from 23 days I need to remove 7 days hence the working days are only 16 days.
range of coverage = target 7, no of period = 1.
now my requirement is 3000 in that month
daily average consumption is 3000/16 = 187.5
safety stock = 187.5*7 = 1313.

12.11.2007 - pl order - 1 qty 2313 available qty - 2313
12.11.2007 - VSF 1000- available qty - 1313
19.11.2007 - pl order - 2000 available qty - 3313

I hope the above 2 examples clears the concept of dynamic safety stock calculation.

PARAMETERS FOR AVERAGE DAILY REQUIREMENTS CALCULATION:
Choose the period indicator as Month, Period, or Week.
Specify the number of periods. This is used by system to calculate the average daily requirements.
Select the "Type of Period Length", i.e. as workdays or calendar days or standard days (days per period). If the type of period length is selected as standard days, they have to specify the "days per period". Using these three parameters, the system calculates average daily requirements using the formula:

\[
\text{average daily requirements} = \frac{\text{Sum of requirements in the number of periods}}{\text{number of days in the number of periods}}.
\]

PARAMETERS FOR TARGET STOCK AS DAY'S OF SUPPLY
Then you have to specify how many workdays of supply you want to maintain as target stock, in your case 15 workdays. If you wanted to maintain a constant 15 days of supply as inventory throughout the planning horizon, just specify the target stock as 15 days and leave rest of the fields as blank, i.e. min, max, and number of periods. The number of periods in this section simply maintains the target stock for that many periods from the date of MRP run. This way you can tell the system to maintain different target stock levels for three different period intervals. For example, if you wanted to maintain 15 days stock for first 3 periods, then specify the target stock as 15 days and number of periods corresponding to it as 3. The system then will maintain the target stock as inventory for first 3 periods from the date of MRP run and subsequent months zero inventory will be maintained. This will allow you to maintain your 15 days supply constantly for 3 periods.