Load Items: Element Load

Load » Load: Load Case Details » Load Case Details: Load Items

Functions

afx_msg VARIANT	**OSLoadUI::AddElementPressure** (const VARIANT FAR &varPlateNo, const VARIANT FAR &varDirection, const VARIANT FAR &varPressure, const VARIANT FAR &varX1, const VARIANT FAR &varY1, const VARIANT FAR &varX2, const VARIANT FAR &varY2) Adds pressure load to plate elements.
afx_msg VARIANT	**OSLoadUI::AddElementHydrostaticPressure** (const VARIANT FAR &varPlateNo, const VARIANT FAR &varLoadVaryDirection, const VARIANT FAR &varLoadDirection, const VARIANT FAR &varStartPressure, const VARIANT FAR &varEndPressure) Adds Hydrostatic pressure loading to plate elements.
afx_msg VARIANT	**OSLoadUI::AddElementTrapPressureEx** (const VARIANT FAR &varPlateNo, const VARIANT FAR &varDirection, const VARIANT FAR &varLoadDirection, const VARIANT FAR &varStartPressure, const VARIANT FAR &varEndPressure, const VARIANT FAR &varPressure3, const VARIANT FAR &varPressure4) Adds trapezoidal pressure loading to plate elements.
afx_msg VARIANT	**OSLoadUI::GetElementPressureLoadCount** (const VARIANT FAR &varPlateNo) Gets the number pressure load(s) for the specified plate.
afx_msg VARIANT	**OSLoadUI::GetElementPressureLoads** (const VARIANT FAR &varPlateNo, VARIANT FAR &varDirection, VARIANT FAR &varW1, VARIANT FAR &varX1, VARIANT FAR &varY1, VARIANT FAR &varX2, VARIANT FAR &varY2) Returns the pressure load(s) with all the parameters for the specified plate.
afx_msg VARIANT	**OSLoadUI::GetElementConcLoadCount** (const VARIANT FAR &varPlateNo) Returns the number of concentrated load for specified plate.
afx_msg VARIANT	**OSLoadUI::GetElementConcLoads** (const VARIANT FAR &varPlateNo, VARIANT FAR &varDirection, VARIANT FAR &varW1, VARIANT FAR &varX1, VARIANT FAR &varY1) Returns the concentrated load(s) with all the parameters for the specified plate.
afx_msg VARIANT	**OSLoadUI::GetElementLoadInfo** (const VARIANT FAR &varloadIndex, VARIANT FAR &varDir, VARIANT FAR &varForce, VARIANT FAR &varDist) Gets element load information generated by specified load item in specified load case. Please select the loadCase from UI (ElementLoadPressure only supported).

Detailed Description

These functions are related to element load.

Function Documentation

◆ AddElementHydrostaticPressure()

```
VARIANT OSLoadUI::AddElementHydrostaticPressure ( const VARIANT FAR & varPlateNo,
                                                  const VARIANT FAR & varLoadDirection,
                                                  const VARIANT FAR & varInterpolateDirection,
                                                  const VARIANT FAR & varMinLoad,
                                                  const VARIANT FAR & varMaxLoad )
```

Adds Hydrostatic pressure loading to plate elements.

Parameters

[in] **varPlateNo**	Plate number ID(s) VARIANT array.
[in] **varLoadDirection**	Load direction: (= 3 to 6 for LocalZ, GlobalX, GlobalY, GlobalZ, respectively)(type - Integer)
[in] **varInterpolateDirection**	Interpolate along Global Axis(Int or Long), valid direction codes are 1, 2, 3 for Interpolate along Global X, Y, Z. No other direction is a valid input.
[in] **varMinLoad**	minimum Pressure load (double).
[in] **varMaxLoad**	maximum Pressure load (double).

Return values

1/True OK.

0/False General error.

C++ Syntax

```
// Add global X direction hydrostatic force, force varying in Y direction from 2.0 units
       to 5.0 units
VARIANT RetVal = OSLoadUI::AddElementHydrostaticPressure(varPlateNo, 3, 1, 2.0, 5.0);
```

VBA Syntax

```
Option Explicit
 Sub Main
     Dim objOpenStaad As Object
     Dim stdFile As String

     Set objOpenStaad = GetObject(,"StaadPro.OpenSTAAD")
     objOpenStaad.GetSTAADFile stdFile, "TRUE"
     If stdFile="" Then
         MsgBox"Bad"
         Set objOpenStaad = Nothing
         Exit Sub
     End If

     Dim RetVal As Variant
     Dim nLCNum As Long
     nLCNum = 1
     Dim bRes As Boolean
     bRes = objOpenStaad.Load.SetLoadActive(nLCNum)
                        s Long
```

```
        plateArray(1) = 10
        plateArray(2) = 12
        plateArray(3) = 13

        Dim varInterpolateDirection As Integer
        varInterpolateDirection = 1 'Interpolate along Global Axis 1=GX, 2=GY, 3=GZ
        Dim loadDirection As Integer
        loadDirection = 3 'Load Direction 3 = Local Z; 4 = Global X; 5 = Global Y; 6 =
          Global Z
        Dim startPre As Double
        startPre = 2
        Dim endPre As Double
        endPre = 5
        RetVal = objOpenStaad.Load.AddElementHydrostaticPressure(plateArray, loadDirection,
          varInterpolateDirection, startPre, endPre)
    End Sub
```

See also

OSLoadUI::AddElementPressure

OSLoadUI::GetElementPressureLoadCount

OSLoadUI::GetElementPressureLoads

OSLoadUI::GetElementTrapLoadCount

OSLoadUI::GetElementTrapPressureLoads

OSLoadUI::GetElementLoadInfo

fForceUnit / fLengthUnit / fLengthUnit

fForceUnit / fLengthUnit / fLengthUnit

◆ AddElementPressure()

```
VARIANT OSLoadUI::AddElementPressure ( const VARIANT FAR & varPlateNo,
                                       const VARIANT FAR & varDirection,
                                       const VARIANT FAR & varPressure,
                                       const VARIANT FAR & varX1,
                                       const VARIANT FAR & varY1,
                                       const VARIANT FAR & varX2,
                                       const VARIANT FAR & varY2 )
```

Adds pressure load to plate elements.

Parameters

[in]	**varPlateNo**	Plate number ID(s) VARIANT array.
[in]	**varDirection**	Load direction: (= 1 to 9 for LocalX, LocalY, LocalZ, GlobalX, GlobalY, GlobalZ, ProjectedX, ProjectedY and ProjectedZ respectively).
[in]	**varPressure**	Magnitude of the pressure or concentrate load on the element.
[in]	**varX1**	Top-Left coordinate X (local).
[in]	**varY1**	Top-Left coordinate Y (local).
[in]	**varX2**	Bottom-Right coordinate X (local).
[in]	**varY2**	Bottom-Right coordinate Y (local).

Remarks

dX1, **dY1**, **dX2** and **dY2** are 0: Pressure applied over the full area of the element.

dX1, **dY1**, **dX2** and **dY2** are ***not*** *0*: Pressure applied over the area between (**dX1** , **dY1**) and (**dX2** , **dY2**) measured from the center of plate(s) in the local axis system.

dX1 and **dY1** are ***not*** *0*,but **dX2** and **dY2** are 0: Concentrate load applied on (**dX1** , **dY1**) measured from the center of plate(s) in the local axis system.

For additional information, please refer to Section 5.32.3.1 of the Technical Reference manual.

Return values

0	OK.
-1	General error.
-8001	Load direction is invalid.

C++ Syntax 1

```
// Add full plate pressure of 2.0 units on plate(s) in global X direction
VARIANT RetVal = OSLoadUI::AddElementPressure(varPlateNo, 4, 2.0, 0.0, 0.0, 0.0, 0.0);
```

VBA Syntax 1

```
e of 2.0 units on plate(s) in global X direction
```

```
Dim RetVal As VARIANT = OSLoadUI.AddElementPressure(varPlateNo, 4, 2.0, 0.0, 0.0, 0.0,
       0.0)
```

C++ Syntax 2

```
// Add global X direction concentrate force of 2.0 units on plate(s) at (3.0, 3.5) of
       coordinate origin at center of plate(s).
VARIANT RetVal = OSLoadUI::AddElementPressure(varPlateNo, 4, 2.0, 3.0, 3.5, 0.0, 0.0);
```

VBA Syntax 2

```
' Add global X direction concentrate force of 2.0 units on plate(s) at (3.0, 3.5) of
       coordinate origin at center of plate(s).
Dim RetVal As VARIANT = OSLoadUI.AddElementPressure(varPlateNo, 4, 2.0, 3.0, 3.5, 0.0,
       0.0)
```

C++ Syntax 3

```
// Add global X direction concentrate force of 2.0 units on plate(s) area between (0.0,
       0.0) and (3.0, 3.5).
VARIANT RetVal = OSLoadUI::AddElementPressure(varPlateNo, 4, 2.0, 0.0, 0.0, 3.0, 3.5);
```

VBA Syntax 3

```
' Add global X direction concentrate force of 2.0 units on plate(s) area between (0.0,
       0.0) and (3.0, 3.5).
Dim RetVal As VARIANT = OSLoadUI.AddElementPressure(varPlateNo, 4, 2.0, 0.0, 0.0, 3.0,
       3.5)
```

See also

OSLoadUI::AddElementHydrostaticPressure

OSLoadUI::GetElementPressureLoadCount

OSLoadUI::GetElementPressureLoads

OSLoadUI::GetElementTrapLoadCount

OSLoadUI::GetElementTrapPressureLoads

OSLoadUI::GetElementLoadInfo

◆ AddElementTrapPressureEx()

```
VARIANT OSLoadUI::AddElementTrapPressureEx ( const VARIANT FAR & varPlateNo,
                                             const VARIANT FAR & varLoadDirection,
                                             const VARIANT FAR & varLoadVaryDirection,
                                             const VARIANT FAR & varStartPressure,
                                             const VARIANT FAR & varEndPressure,
                                             const VARIANT FAR & varPressure3,
                                             const VARIANT FAR & varPressure4 )
```

Adds trapezoidal pressure loading to plate elements.

Parameters

[in] **varPlateNo**	Plate number ID(s) (type - VARIANT array of.Long)
[in] **varLoadDirection**	Load direction: (= 3 to 6 for LocalZ, GlobalX, GlobalY, GlobalZ, respectively) (type - Integer)
[in] **varLoadVaryDirection**	Load varying direction: (= 1, 2 ,3 for X, Y and JOINT respectively) (type - Integer)
[in] **varStartPressure**	Pressure at loading starting point.(Node1 when JOINT is selected) (type - Double)
[in] **varEndPressure**	Pressure at loading ending point.(Node2 when JOINT is selected) (type - Double)
[in] **varPressure3**	Pressure at loading point.(applicable only when JOINT is selected) (type - Double)
[in] **varPressure4**	Pressure at loading point.(applicable only when JOINT is selected) (type - Double)

Return values

1/True OK.

0/False General error.

C++ Syntax

```
// Add global X direction trapezoidal force, force varying in Y direction from 2.0 units
       to 5.0 units to plate element 1
VARIANT RetVal = OSLoadUI::AddElementTrapPressureEx(1, 3, 2, 2.0, 5.0, 0.0, 0.0);
```

VBA Syntax

```
Option Explicit

  Sub Main
      Dim objOpenStaad As Object
      Dim stdFile As String

      GetObject(,"StaadPro.OpenSTAAD")
      objOpenStaad.GetSTAADFile stdFile, "TRUE"
```

```
    If stdFile="" Then
        MsgBox"Bad"
        Set objOpenStaad = Nothing
        Exit Sub
    End If
    Dim RetVal As Variant
   ' Add global X direction trapezoidal force, force varying in Y direction from 2.0
     units to 5.0 units to plate element 1
    Dim nLCNum As Long
    nLCNum = 1
    Dim bRes As Boolean
    bRes = objOpenStaad.Load.SetLoadActive(nLCNum)
    Dim plateArray(0) As Long
    plateArray(0) = 1
    Dim loadVaryDirection As Integer
    loadVaryDirection = 2
    Dim loadDirection As Integer
    loadDirection = 3
    Dim startPre As Double
    startPre = 2.0
    Dim endPre As Double
    endPre = 5.0
    Dim pre3 As Double
    pre3 = 0
    Dim pre4 As Double
    pre4 = 0
    RetVal= objOpenStaad.Load.AddElementTrapPressureEx(plateArray, loadDirection,
     loadVaryDirection, startPre, endPre, pre3, pre4)
    MsgBox"Macro Ending"
    Set objOpenStaad = Nothing
End Sub
```

See also

- **OSLoadUI::AddElementPressure**
- **OSLoadUI::AddElementHydrostaticPressure**
- **OSLoadUI::GetElementPressureLoadCount**
- **OSLoadUI::GetElementPressureLoads**
- **OSLoadUI::GetElementLoadInfo**

◆ GetElementConcLoadCount()

VARIANT OSLoadUI::GetElementConcLoadCount (const VARIANT FAR & varPlateNo)

Returns the number of concentrated load for specified plate.

Parameters

[in] **varPlateNo** Plate number ID.

Return values

<Val> The number of concentrated load on specified plate.

-1 General error.

C++ Syntax

```
// Count the concentrated load(s) on plate #2.
VARIANT RetVal = OSLoadUI::GetElementConcLoadCount(2);
```

VBA Syntax

```
' Count the concentrated load(s) on plate #2.
Dim RetVal As VARIANT = OSLoadUI.GetElementConcLoadCount(2)
```

See also

OSLoadUI::GetElementConcLoads

◆ GetElementConcLoads()

```
VARIANT OSLoadUI::GetElementConcLoads ( const VARIANT FAR & varPlateNo,
                                        VARIANT FAR &       varDirection,
                                        VARIANT FAR &       varW1,
                                        VARIANT FAR &       varX1,
                                        VARIANT FAR &       varY1 )
```

Returns the concentrated load(s) with all the parameters for the specified plate.

Parameters

[in]	**varPlateNo**	Plate number ID
[out]	**varDirection**	If non-null, the direction.
[out]	**varW1**	If non-null, the pressure.
[out]	**varX1**	If non-null, the first d x coordinate.
[out]	**varY1**	If non-null, the first d y coordinate.

Return values

0 OK.

-1 General error.

C++ Syntax

```
// Get the concentrated load(s) information on plate#2.
VARIANT RetVal = OSLoadUI::GetElementConcLoads(2, &varDirection, &varW1, &varX1, &varY1);
```

VBA Syntax

```
' Get the concentrated load(s) information on plate#2.
Dim RetVal As VARIANT = OSLoadUI.GetElementConcLoads(2, &varDirection, &varW1, &varX1,
       &varY1)
```

See also

OSLoadUI::GetElementConcLoadCount

◆ GetElementLoadInfo()

```
VARIANT OSLoadUI::GetElementLoadInfo ( const VARIANT FAR & varloadIndex,
                                       VARIANT FAR &        varDir,
                                       VARIANT FAR &        varForce,
                                       VARIANT FAR &        varDist )
```

Gets element load information generated by specified load item in specified load case. Please select the loadCase from UI (ElementLoadPressure only supported).

Parameters

[in]	**loadIndex**	Load item index (Zero based).
[out]	**varDir**	Load direction: (= 0 to 8 for LocalX, LocalY, LocalZ, GlobalX, GlobalY and GlobalZ, ProjectedX, ProjectedY, ProjectedZ respectively).
[out]	**varForce**	Element pressures VARIANT array: dW1, dW2, dW3 and dW4 (see commands for add element pressure).
[out]	**varDist**	Element force distances VARIANT array: dX1, dY1, dX2 and dY2 (see commands for add element force).

Return values

1 Successful.

0 Unsuccessful.

-1 Not Implemented.

C++ Syntax

```
// Gets element load assigned with load item #1 in Load Case #2.
long RetVal = OSLoadUI::GetElementLoadInfo(0, 0, &varDir, &varForce, &varDist);
```

VBA Syntax

```
Option Explicit

  Sub Main
      Dim objOpenStaad As Object
      Dim stdFile As String

      Set objOpenStaad = GetObject(,"StaadPro.OpenSTAAD")
      objOpenStaad.GetSTAADFile stdFile, "TRUE"
      Dim RetVal As Variant
      Dim varDirection As Long
      Dim varForce(3) As Double
      Dim varDist(3) As Double
      Dim itemsCount As Long
      Dim LoadCaseNo As Long
      Dim i As Long
      Dim IsEleLoad As Long

      LoadCaseNo = 1
      itemsCount = objOpenStaad.load.GetLoadItemsCount(LoadCaseNo)
      If itemsCount > 0 Then
```

```
        For  i = 0 To itemsCount -1
            IsEleLoad = objOpenStaad.load.GetLoadItemType(LoadCaseNo, i)
            If IsEleLoad = 3310 Then
            RetVal = objOpenStaad.load.GetElementLoadInfo(i, varDirection, varForce,
         varDist)
            End If
        Next
        End If

End Sub
```

See also

OSLoadUI::AddElementPressure

OSLoadUI::AddElementHydrostaticPressure

OSLoadUI::GetLoadItemsCount

OSLoadUI::GetLoadItemType

◆ GetElementPressureLoadCount()

VARIANT OSLoadUI::GetElementPressureLoadCount (const VARIANT FAR & varPlateNo)

Gets the number pressure load(s) for the specified plate.

Parameters

[in] **varPlateNo** Plate number ID.

Return values

<Val> The number of pressure load(s).

-1 General error.

C++ Syntax

```
// Counts the pressure load(s) on plate #2.
VARIANT nPresLoad = OSLoadUI::GetElementPressureLoadCount(2);
```

VBA Syntax

```
' Counts the pressure load(s) on plate #2.
Dim nPresLoad As VARIANT = OSLoadUI.GetElementPressureLoadCount(2)
```

See also

OSLoadUI::AddElementPressure

OSLoadUI::AddElementHydrostaticPressure

OSLoadUI::GetElementPressureLoads

OSLoadUI::GetElementTrapLoadCount

OSLoadUI::GetElementTrapPressureLoads

◆ GetElementPressureLoads()

```
VARIANT OSLoadUI::GetElementPressureLoads ( const VARIANT FAR & varPlateNo,
                                            VARIANT FAR &       varDirection,
                                            VARIANT FAR &       varW1,
                                            VARIANT FAR &       varX1,
                                            VARIANT FAR &       varY1,
                                            VARIANT FAR &       varX2,
                                            VARIANT FAR &       varY2 )
```

Returns the pressure load(s) with all the parameters for the specified plate.

Parameters

[in]	**varPlateNo**	Plate number ID.
[out]	**varDirection**	Load direction = 1 to 9 for LocalX, LocalY, LocalZ, GlobalX, GlobalY, GlobalZ, ProjectedX, ProjectedY and ProjectedZ respectively (in VARIANT array).
[out]	**varW1**	Magnitude of the pressure load(s) in VARIANT array.
[out]	**varX1**	Top-Left coordinate X (local) in VARIANT array.
[out]	**varY1**	Top-Left coordinate Y (local) in VARIANT array.
[out]	**varX2**	Bottom-Right coordinate X (local) in VARIANT array.
[out]	**varY2**	Bottom-Right coordinate Y (local) in VARIANT array.

Return values

0 OK.

-1 General error.

C++ Syntax

```
// Get the pressure load(s) information for plate #2.
VARIANT RetVal = OSLoadUI::GetElementPressureLoads(2, &varDirection, &varW1, &varX1,
       &varY1, &varX2, &varY2);
```

VBA Syntax

```
' Get the pressure load(s) information for plate #2.
Dim RetVal As VARIANT = OSLoadUI.GetElementPressureLoads(2, &varDirection, &varW1,
       &varX1, &varY1, &varX2, &varY2)
```

See also

OSLoadUI::AddElementPressure

OSLoadUI::AddElementHydrostaticPressure

OSLoadUI::GetElementPressureLoadCount

OSLoadUI::GetElementTrapPressureLoads