壓力容器設計: 配件最小厚度要求

DOC. NO. : table-uw-16-1-rev0

各申機械設計工作室

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1 介紹

ASME CODE 代替厚度要求 UG-45，配件的最小壁厚不得低於表 UW-16.1 所示的最近等效標稱管道尺寸。

Table UW-16.1 Minimum Thickness Requirements for Fittings		
NPS	in.	mm
1/8	0.11	2.7
1/4	0.11	2.7
3/8	0.11	2.7
1/2	0.14	3.6
3/4	0.16	4.2
1	0.22	5.5
1-1/4	0.30	7.5
1-1/2	0.30	7.5
2	0.31	7.9
2-1/2	0.37	9.5
3	0.38	9.5

2   maxima source : table-uw-16-1.mac

```
/*
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*/

/*確認壓力容器配件的最小厚度 */

kill(all);

minithickness_inch(NPS) := block([],
  if sequal(NPS, "1/8")
  then 0.11
  elseif sequal(NPS, "1/4")
  then 0.11
  elseif sequal(NPS, "3/8")
  then 0.11
  elseif sequal(NPS, "1/2")
  then 0.14
  elseif sequal(NPS, "3/4")
  then 0.16
  elseif sequal(NPS, "1")
  then 0.22
  elseif sequal(NPS, "1-1/4")
  then 0.30
  elseif sequal(NPS, "1-1/2")
  then 0.30
  elseif sequal(NPS, "2")
  then 0.31
  elseif sequal(NPS, "2-1/2")
  then 0.37
  elseif sequal(NPS, "3")
  then 0.38
  else
  "NULL");
```

```
minithickness_mm(NPS) := block([],
  if sequal(NPS, "1/8")
  then 2.7
  elseif sequal(NPS, "1/4")
  then 2.7
  elseif sequal(NPS, "3/8")
  then 2.7
  elseif sequal(NPS, "1/2")
  then 3.6
  elseif sequal(NPS, "3/4")
  then 4.2
  elseif sequal(NPS, "1")
  then 5.5
  elseif sequal(NPS, "1-1/4")
  then 7.5
  elseif sequal(NPS, "1-1/2")
  then 7.5
  elseif sequal(NPS, "2")
  then 7.9
  elseif sequal(NPS, "2-1/2")
  then 9.5
  elseif sequal(NPS, "3")
  then 9.5
  else
  "NULL");

/*
設定單位系統: 國際標準 "SI" 或 美國慣用單位 "U.S. customary units"
*/

unit_system : "SI";

minithickness_fitting(unit_system, nps_no):= block([],
  if sequal(unit_system, "SI")
  then minithickness_mm(nps_no)
  elseif sequal(unit_system, "U.S. customary units")
  then minithickness_inch(nps_no)
  else
  "NULL");
```

各 申 機 械 設 計 工 作 室
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