
MDF

*

(/ / : / / :)

mm

()

mm

(

MDF

) mm

()

MDF

MDF

:

...

LDPE, PP

(MDF)

()

(Falk et al, 2001)

) ()

(

Madhoushi et)

(al,2008

MDF

Eckelman and Eckelman, 1974 Eckelman, 1973)

Eckelman, Eckelman, 1988 Martin, 1980

(Semple and Smith 2006

MDF

(MDF)

(MDF)

()

(Chaharmahali et al, 2008)

(Khoo et al, 2008)

WPC

#

()

(d= / mm) # (d= / mm)

MDF

/ /

mm

/ mm

mm

mm

(mm)

/ mm

/ g/cm³

(/ mm)

mm

mm

mm

)

)

(

(

(MDF)

/ g/cm³

mm

/ Mpa

MDF

/ MPa

MDF

.(Eckelman,1974)

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MDF

(

) mm

() mm

() mm

DIN EN320

/ cm × /

(/ in) mm

% MDF

.(Eckelman, 1988)

$$W = \frac{P_{\max}}{L}$$

P_{\max} (N/mm)

(mm)

W

L (N)

() mm

MDF
(mm)

mm/min

SPSS

() Instron

()



Sheet metal screw

پیچ خودکار

Drywall screw

پیچ پانلی

Wood screw

پیچ چوب

mm

mm

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mm / / mm mm

mm

mm

mm

t ()

()

()

%

mm ()

() mm

() mm

()

...

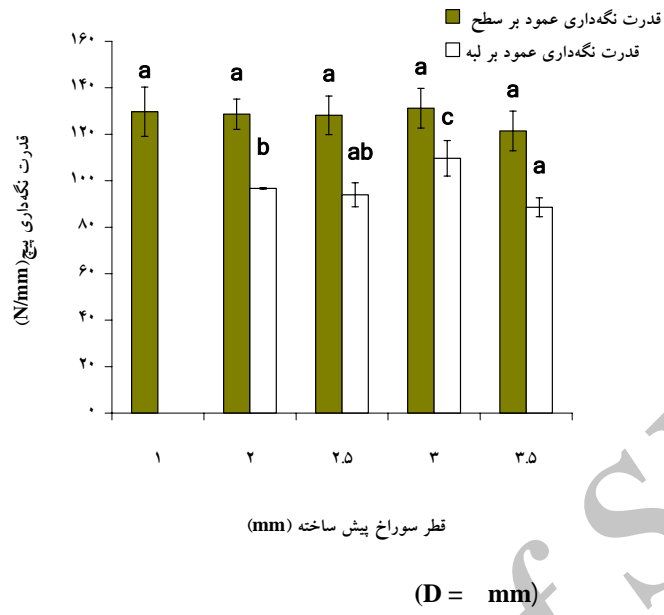
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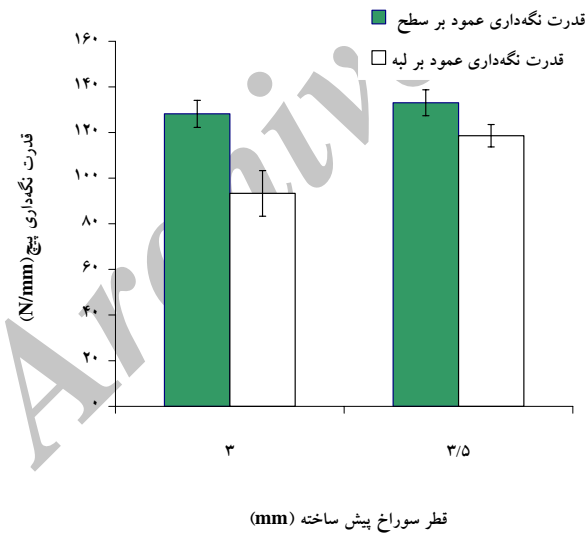
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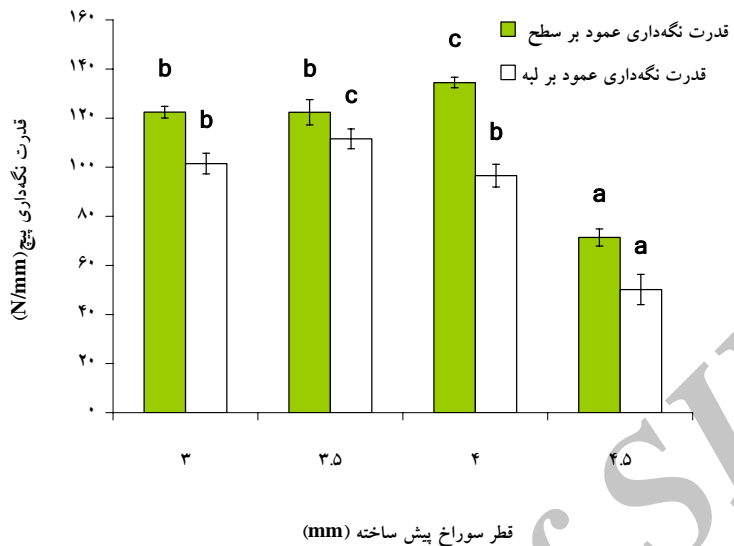
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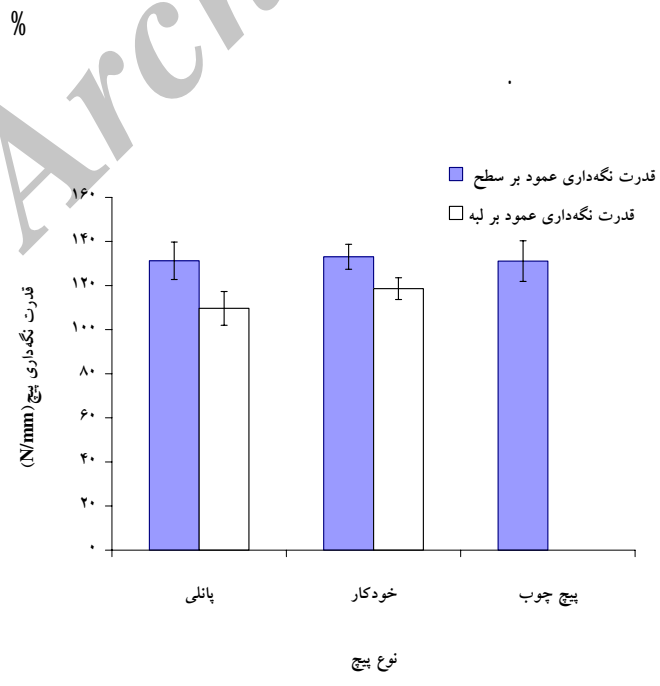
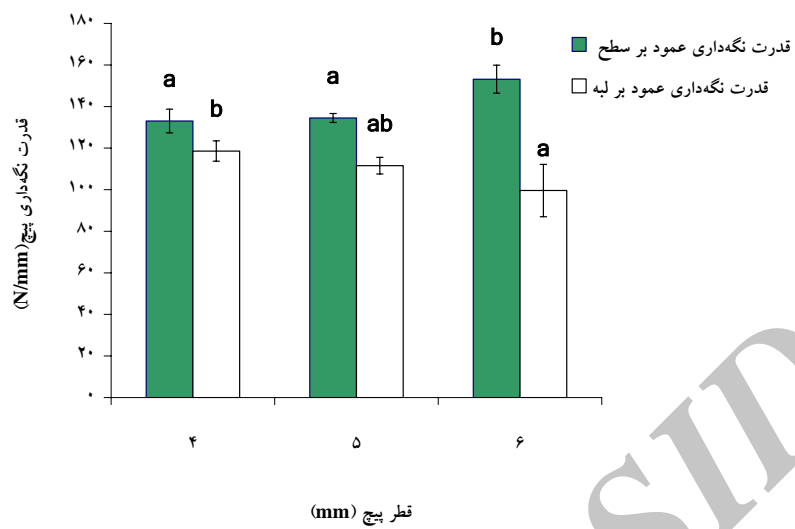




(D = mm)



(D = mm)



MDF

MDF

MDF

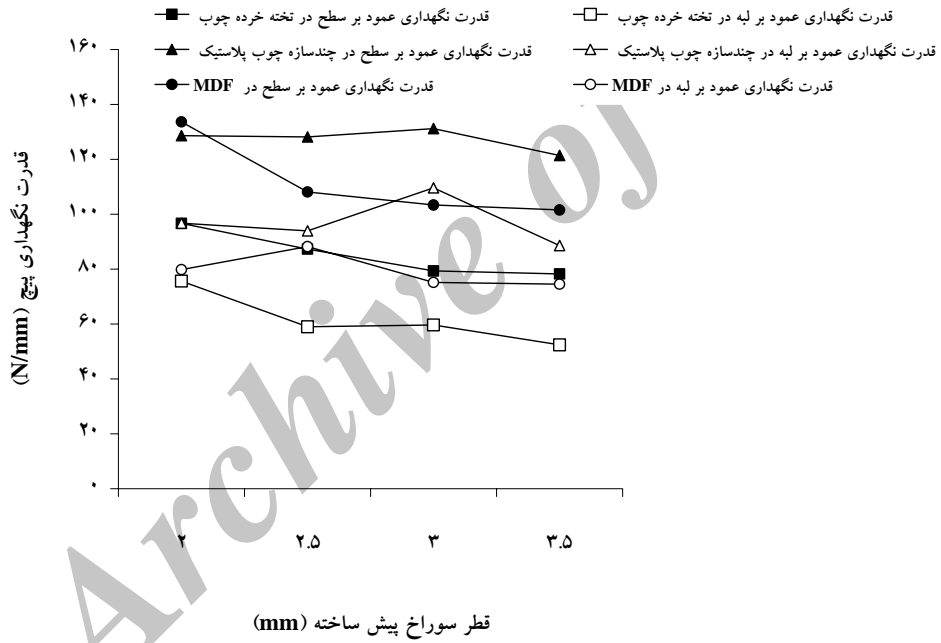
%

MDF
(mm)

%

MDF

MDF



قطر سوراخ پیش ساخته (mm)

MDF

% MDF

MDF

() Eckelman

() Eckelman

MDF

MDF

MDF

()

Falk et al,)

(Chaharmahali et al, 2008 2001

MDF

MDF

()

MDF

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Investigation on withdrawal strength of various screws used in furniture industry in commercial wood plastic composite (WPC) and compare with that in commercial medium density fiberboard (MDF) and particleboard

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Abstract

Withdrawals resistances of screws driven into commercial wood plastic composite (WPC) panels in both face and edge directions have been measured and the results have been compared with those of conventional medium density fiberboard (MDF) and particleboard. Three types of screws namely; sheet metal screw (gauge # 4, 8, 10, 14), wood screw (gauge #8) and drywall screw (gauge #8) were used. The results have indicated that withdrawal resistances of screws in WPC panels in both directions increase as screw diameter. Similar increases were observed when pilot holes diameter were increased close to the root diameter of the screws. Beyond this limit, increasing the pilot hole diameter up to the nominal diameter of the screws, significantly reduced withdrawal resistance. No significant differences were observed between different types of screw. Face and edge withdrawal resistances of screws in WPC panels were higher as compared with those of MDF and particleboard panels.

Keyword: Face and edge withdrawal strength, Sheet metal screw, Drywall screw, Wood screw, Commercial WPC, MDF, Particleboard.

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