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# Mechanics of Materials

## Topic 5 – Pure Bending

by

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The athlete shown holds the barbell with his hands placed at equal distances from the weights. This results in pure bending in the center portion of the bar. The normal stresses and the curvature resulting from pure bending will be determined in this chapter.



Source: <http://www.freestockphotos.biz/stockphoto/15395>



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For the sport buggy shown, the center portion of the front axle is in bending.



Source: <https://pixabay.com/en/buggy-vehicle-off-road-sport-2352323/>



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Clamp used to glue lumber pieces together.



Source: <http://m.photoviewer.naver.com/blog?listUrl=https%3A%2F%2Fm.blog.naver.com%2FPostView.nhn%3FblogId%3Dmorobona0729%26logNo%3D220720524823&imgId=1&host=https%3A%2F%2Fm.blog.naver.com%2Fphotoviewer&historyBack=true&blogId=morobona0729&logNo=220720524823#main/1>



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Wide-flange steel beams form the frame of many buildings.



Source: [https://commons.wikimedia.org/wiki/File:Construction\\_of\\_Oaks\\_Medical\\_Centre\\_-\\_Shady\\_Lane\\_-\\_Great\\_Barr\\_05.jpg](https://commons.wikimedia.org/wiki/File:Construction_of_Oaks_Medical_Centre_-_Shady_Lane_-_Great_Barr_05.jpg)



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Reinforced concrete building experienced bending moment.



Source: [https://www.flickr.com/photos/concrete\\_forms/2883265976](https://www.flickr.com/photos/concrete_forms/2883265976)



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