

DESIGN OF BUILT-IN COMPARTMENT WITH CLOTH DRYING FACILITIES FOR APARTMENT

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ABSTRACT

This report provides an overview for a built-in compartment of cloth drying facilities in an apartment by using a heat pump dehumidifier. Applications and functions of a heat pump dehumidifier will be explained in detail.

In this report, the cycle of our clothes drying facilities will be explained. The performance and operating characteristics of a built-in compartment using a heat pump dehumidifier. Wet clothes after taken out from a washing machine have 48-50% moisture content, which is dried to 10% moisture content in the dryer. A heat pump dehumidifier was used. Air was re-circulated through the wet clothes from bottom to the top and back through the heat pump dehumidifier. Drying air temperature in the compartment ranged from 65 degrees Celsius to 70 degrees Celsius. Time taken to dry the clothes has been calculated as 1.27 minutes. Besides, the amount of clothes which can be dried, the power consumption for the heat pump dehumidifier, the coefficient of performance for our heat pump dehumidifier, heat loss during operation and others have been calculated and shown in this report. Other important elements such as evaporator coil, condenser coil, refrigerant used, compressor and others will be described in detail. Photos and diagrams for our built-in compartment will be shown too.

Besides, the design of the apartment will be shown and the drying area will be indicated. AutoCAD diagrams for the apartment and each unit will be drawn out to show the public.