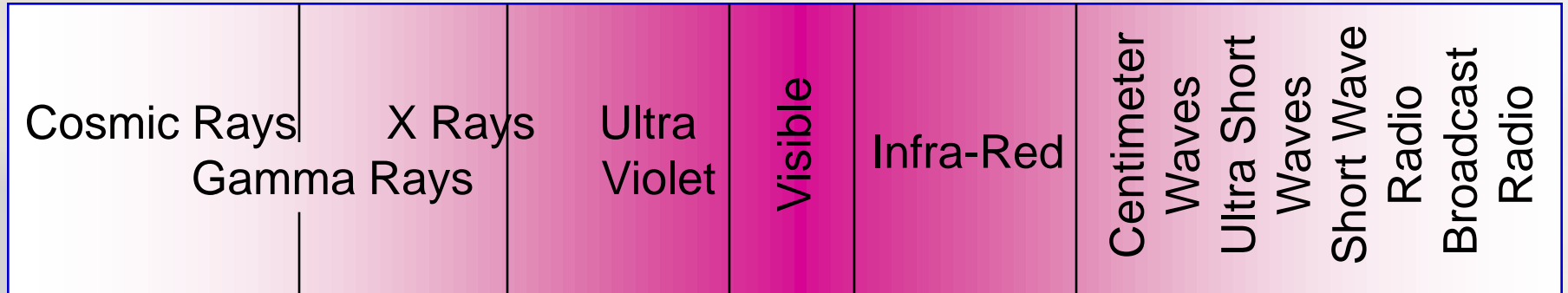


Infra-Red Drying

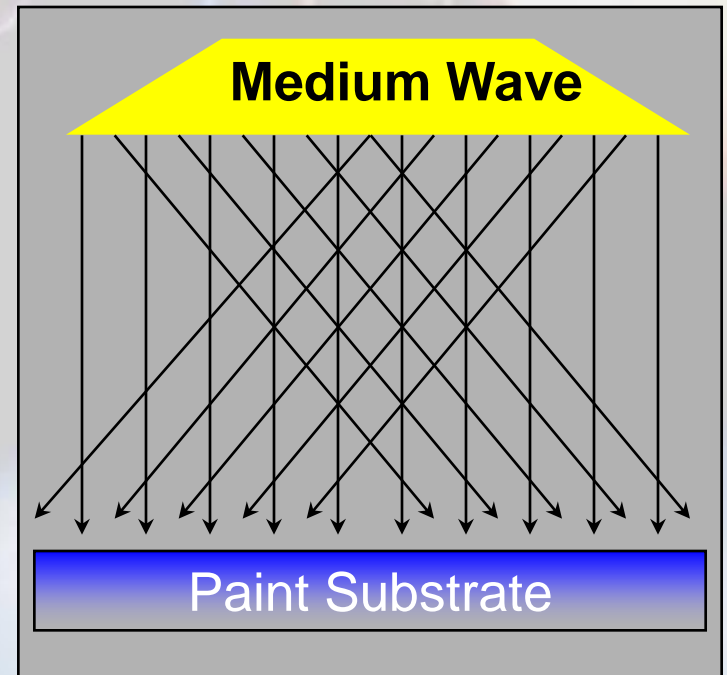
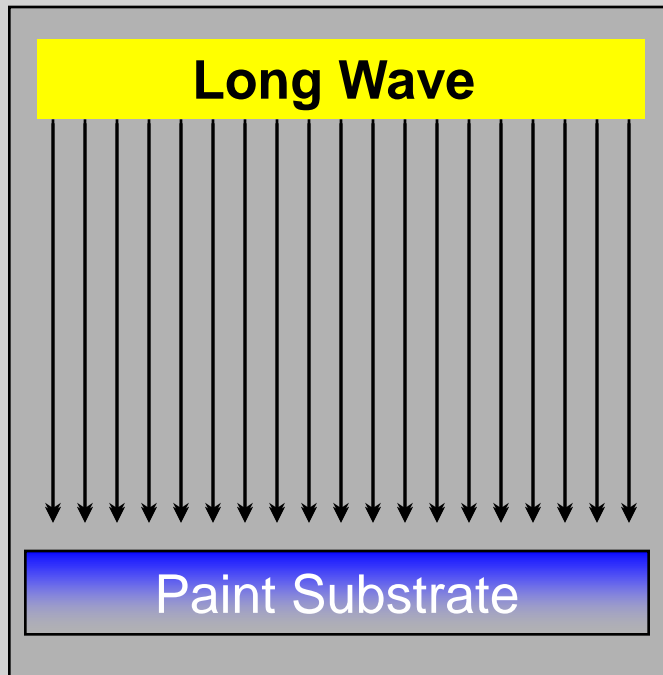


The Infra-Red Spectrum



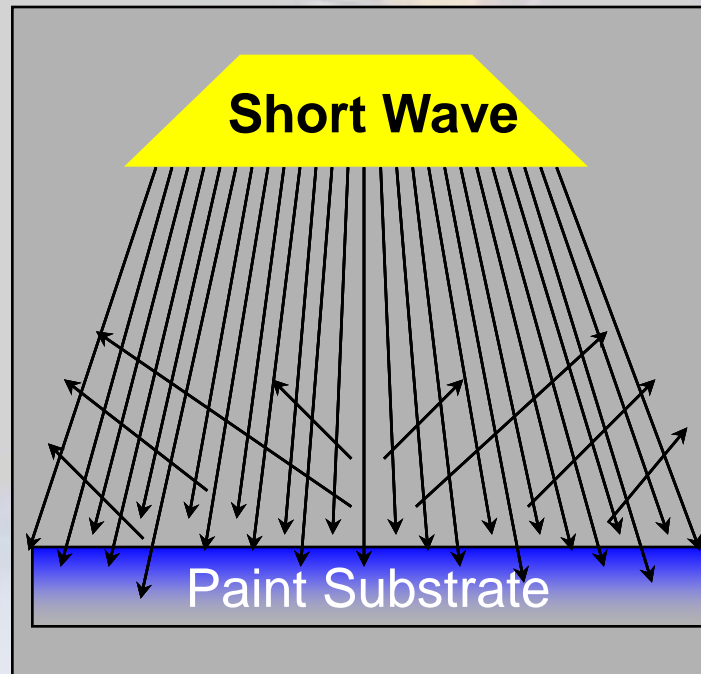
IR Equipment

IR Wavelength Comparison



IR Equipment

IR Wavelength Comparison cont



IR Equipment Advantages



- ☞ **Better workshop productivity**
- ☞ **Faster through drying**
- ☞ **Time saving**
- ☞ **lower energy consumption**
- ☞ **Greater economy**
- ☞ **Increased profit**

IR Equipment performance

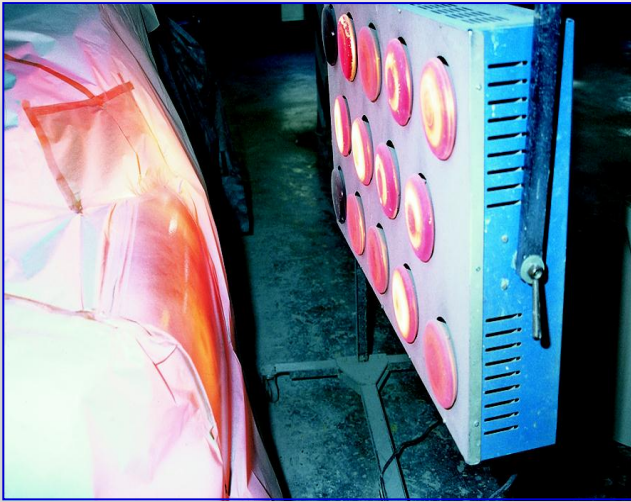
Long wave ?
Medium wave ?
Short wave ?

☰ **The shorter the waveband, the higher the temperature produced**

☰ **The difference in the wave forms is the depth of penetration through the paint film**

☰ **Short wave has greater penetration than medium or long wave**

Long Wave IR Equipment



The most commonly used type for drying materials such as :-

☞ Inks

☞ Textiles

☞ Adhesives

Not recommended for:- Paint drying due to slow heating times and can give skinning of the paint film producing solvent blisters

Will not penetrate the paint film. Surface drying only!

Medium Wave IR Equipment



- ☞ **Penetrates further into the paint film**
- ☞ **More efficient than long wave IR can reach a higher temperature than long wave**
- ☞ **Less critical than long wave regarding blistering, due to the slow increase of metal temperature**
- ☞ **Normally needs no flash off time**

Short Wave IR Equipment



- ☞ **Penetrates the paint film**
- ☞ **More efficient than medium wave**
- ☞ **Can reach a higher temperature**
- ☞ **Faster than medium wave**
- ☞ **Has a flash off to remove solvents**
- ☞ **This gives security against blistering**

Short wave is considered to be the most efficient form of IR drying available today

Time studies for Waterborne Basecoat

Spot repair

SPOT REPAIR	Air drying	IR	Low-bake	Blowing	
	Conventional Basecoat	Water-borne Basecoat			
spray pass 1 & 2	0,5mm				
1st drying	6-7min				
spray pass 1 & 2		0,5min	0,5min	0,5min	0,5min
2nd drying		15min	4-8min	5-10min	6-8min
cooling time			5-6min	5-6min	
TOTAL	6-7min	15min	9-14min	10-16min	6-8min

Recorded at normal conditions 22°C 30% - 35% relative humidity

Time studies for Waterborne Basecoat

Part repair

Partial Repaint	Air drying	IR	Low-bake	Blowing	
	Conventional Basecoat	Water-borne Basecoat			
spray pass 1 & 2	4mm				
1st drying	10min				
spray pass 1 & 2		4min	4min	4min	0,5min
2nd drying		20min	4min	5-10min	6-8min
cooling time			5-6min	5-6min	
TOTAL	14min	24min	14min	14-19min	10-12min

Recorded at normal conditions 22°C 30% - 35% relative humidity

Time studies for Waterborne Basecoat

Overall repair

Overall repair	Air drying	IR	Low-bake	Air Nozzle
	Conventional Basecoat	Water-borne Basecoat		
spray pass 1 & 2	12mm			
1st drying	10-15min			
spray pass 1 & 2		12min	12min	12min
2nd drying		20-30min	10min	15min
cooling time			5-6min	5-6min
TOTAL	22-27min	32-42min	27-28min	32-33min

Recorded at normal conditions 22°C 30% - 35% relative humidity